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CHAPTER III

COMPETITION AND MONOPOLY IN TRANSPORT

1. *The interpermeation of competition and monopoly, III, m, 1. illustrated by the simple case of traffic at a small ferry.*

Man can create thought: but he can only move matter, readjust it and bring it into position for being affected by Nature's chemical and vitalizing influences: there is indeed a large element of simple transport in mining, forestry and even some manufacturing industries¹. But yet the "transport" industries, which undertake nothing more than the mere movement of persons and things from one place to another, have constituted one of the most important activities of man in every stage of advanced civilization.

Transport is a common need of nearly all persons and nearly all goods. Speaking generally, each transport agency can carry almost anything in its special area; and it thus differs from a cotton spinning mill, the plant of which cannot be used as a whole for any other purpose than its own. But much of the plant of an engineering establishment often takes part in the making of hundreds of various products. No doubt there is much variety in the handling appropriate to them: but a similar variety is often met in the handling for transport of various things; as, for instance, human beings and live animals; coal and gold; lumber and perishable fruit. Thus the services rendered by transport agencies are so much more uniform in character than those rendered by most other industries, that the varying relations of monopoly and competition can be traced in them, with less intermingling of technical considerations peculiar to them than in the case of any other great group of

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III, III, 1. industries. They are therefore used to set the keynote of the present Book.

As was indicated at the beginning of this Book, the most prominent instance of the interpermeation of competition and monopoly in the modern world is to be found in railway traffic. But the advantages which a railway company derives from the exclusive occupation of a great thoroughfare have very little counterpart in other industries. Accordingly it is best to start with industries of transport on open ways by land and water: for competition penetrates into them further than into the railway industry.

The main outlines of the problems of transport are presented in their simplest form in the case of a small ferry. For the journey being short, the same boat generally carries passengers and all manner of goods. there is no occasion to make special provision for things that need to travel quickly, or require careful packing or tending. Thus the ferry differs widely from a shipping line and a railway but yet its management sometimes raises issues, which are prominent in railway literature.

For instance, a ferry-boat with only half its complement of passengers could take a few more without appreciable cost. When therefore we say that free competition among ferry-boats, where there is no monopoly, tends to make the charges equal to the cost of service, what we mean is that it tends so to adjust the supply of ferry-boats and their charges to demand, that the earnings of a boat give normal remuneration to the capital and labour invested in it: competition adjusts charges, not to the cost of carrying any particular passenger, but to the *whole process* of ferrying for goods and passengers alike.

If the boats carried only passengers, each passenger might fairly be said to have cost the annual expenses (including profits and depreciation) of working a ferry-boat, divided by the number of passengers carried in the year. This is a simple instance of the general proposition that the cost of production, with which economic science is concerned, is scarcely ever that of a single unit; it is nearly always that of a whole process. The cost of a particular copy of a book or a particular ice, like that of carrying a particular passenger on such a ferry, must be inferred from

the cost of the whole production. A book left on the publisher's hands, or an ice which a vendor takes home on a hot day, corresponds to a vacant place in a ferry-boat or a railway train: the prices of those things which are marketed must cover the costs of production of those which are not marketed. The fact that a train can carry an additional passenger without appreciable cost to it, has sometimes been alleged as a distinctive feature of the railway industry: but it is only a strong instance of a general rule.

Again, on the ferry-boat, as on the railway, there is no simple rule for dividing out the costs between passengers and goods. If the space occupied by cargo could not in any case have accommodated passengers, the division would, for the time, be arbitrary. But the structure of a boat can often be so modified as to change the proportions of the accommodation which it offers for passengers and cargo: and then the additional cost required for constructing and working a boat to carry rather less cargo and rather more passengers, or *vice versa*, affords the basis on which free competition could divide out cost and charges in the long run between the two kinds of traffic. In such matters the tendency to experiment, which is innate in human nature, will sometimes try various arrangements but more often there is an inert acquiescence in a traditional shape of boat and a traditional distribution of charges.

If all the ferry-boats connecting an island with the mainland are in the hands of a single owner, with absolute permanent monopoly, unfettered by any regulations, his charges may probably be adjusted to "what the traffic will bear," in the sense of yielding the maximum monopoly revenue. But he may be in some measure influenced by considerations other than those of immediate gain: and in the extreme case in which the island belongs to him, he may reflect that charges, which appreciably diminished its attractions for residence and for business, would so retard the growth of population and the investment of capital in it, that he would lose in rents of agricultural and urban land, and in other ways, more than he gained from high charges for the ferry. (He may therefore lower his charges a long way towards those which would afford the *maximum total benefit*: that is the sum of the net benefits which he derives directly from the ferry;

III, III, 2. together with those derived by the islanders from the journeys which they would take, and from the business which they would carry out if the ferry charges were low, but which they would forego if the charges were high.) If he owned only a part of the land, he would not, as a matter of business, lower his rates very far: he might however adopt a "Compromise" set of rates, lower than pure monopoly rates, but higher than those which he would adopt if he regarded his own interest as substantially one with that of the islanders.

2. *On the open high road some kinds of traffic show traces of monopoly, and of the arbitrary distribution of general costs: but competition keeps the charges for the main bulk of heavy traffic close to its actual costs.*

The problems of a carrier on a route, which offers insufficient employment for more than a single cart, resemble those of a ferryman in like case. So long as he does not set his charges so high as to invite competition, he has a partial monopoly; and he may put a rather high charge on any service, which is desired by people who can afford to pay well, and have no convenient alternative: though those services, which farmers and well-to-do people can discharge easily for themselves, will not bear a high rate.

More interesting are the problems of services by coaches, working with fixed time tables, and carrying mails, passengers and light parcels. Their equipment involves large expense, and many journeys that hardly pay prime costs; and, partly for these reasons, their charges are arranged in some respects on methods which are commonly regarded as characteristic of monopolistic railway policy. A coaching firm can adjust fares for passengers inside and outside, and for parcels, to that which each sort of the traffic will bear without greatly shrinking. If it finds that this arrangement of charges, leaves part of its accommodation idle, while another part is over burdened, the shape of the coaches can be gradually modified to suit the changed conditions: or supplementary vehicles can be employed.

Again, the conflict of interests between long and short distance railway traffic is commonly associated with railway monopoly: but it may exist on the highway, in a place where

the total demand for the services of public passenger conveyance III, m, 2. is small, even though there be no monopoly. If there are two or more roads (but no railroad) connecting two towns, the coaches serving them will choose the shortest. Those who live on a longer route will however desire facilities for travelling both locally and to and from each of the towns: but their traffic may probably not suffice to give fairly good occupation for a single coach; therefore, if a coach is put on that route its charges per mile may reasonably be higher than those on the main route. But that coach could not attract passengers for the through journey without carrying them at somewhat lower fares for the whole journey than are charged on the main route; and therefore at a much lower charge per mile than for local traffic on its special route.

The competing coaches on the main route may acquiesce in that arrangement. But if those who live on the longer route find themselves charged more for a long stretch of the journey between the two towns than is charged for the whole distance between the towns by their route, a feeling of grievance arises; which is not easily to be allayed by argument, though in fact it is not well founded. Such cases are rare: but somewhat similar cases of reasonably high charges for short distance traffic have been given great prominence in discussions of public policy as to railways; as we shall see.

Passenger omnibuses in London passed long ago out of the hands of small firms into those of considerable companies. After a time the companies divided out the traffic between them in peace, broken occasionally by violent fights¹. With the advent of motor traffic, there has been an increasing advantage in being able to keep a large general reserve which could come to the aid of any particular district, in case of exceptional demands by the public or breakdowns of the plant: thus combination grows.

¹ They made common cause against interlopers; and there was an office at which a list of fees was kept, each corresponding to the price which must be paid for leave to run an omnibus on a particular route at given hours of the day. Of course any omnibus might start without paying the fee; but if it did, it would be "nursed" by one running just before it, and another just behind it; with orders not to spare the horses, but to out in between the intruding omnibus and its passengers.

III, III, 2. But in cities of the first rank the competitive activities of tramways and motor-cabs are supplemented by those of underground railways. The recent amalgamation of London underground railway, tramway, and omnibus companies gives scope for great economies and enlarged conveniences for travellers. It may prove a great public benefit so long as those in control are able, energetic, alert to seek improvements in technique; and to promote subordinates, with true insight into their qualities of mind and character. But, should any slackness supervene, the monopolistic power of the amalgamation may raise demands for authoritative intervention, and thus increase the burdens that tend to impair the efficiency of Government in that work, which it alone can do.

Again, much of the collection and distribution of large and small parcels over a very wide area, though open to everyone, falls necessarily into the hands of one or more powerful organizations: it is in fact of a scope too large to be perfectly managed by any force less than that of the universal State post. Thus the long-distance-distribution of light parcels, letters, etc., has fallen almost wholly into the hands of public and private bodies with large resources¹.

Far different is the case of the transport of heavy goods by road in large quantities. Everyone who habitually sends whole wagon loads of any sort of goods, either keeps his own wagons for the purpose; or makes a contract for the work on competitive terms, close to actual cost of service, with some firm that is specially equipped for such work. The recent improvement of the surface of main roads, and the development of wagons and even small trains propelled by steam or internal combustion along the roads, introduces a new competitive element into

¹ The divergences between charge and cost of service for postal services are indeed grotesque. For instance, the charge for sending a book by post a mile or so from one part of the same postal delivery system to another, is the same as for sending it from any part of the Postal Union to any other, though the two may be ten thousand miles apart. Perhaps motor wagons may redress some of these anomalies; the charges for the delivery of parcels over small distances being reduced to much lower levels by the activities of private companies. These companies are however not unlikely to develop after a time monopolistic tendencies. A comparison of the practice of the Governments of Western Europe in this matter with that of American Express Companies in regard to the collection and delivery of parcels is not favourable to private capitalistic organization.

the charges made by railways for carrying goods in bulk over III, III, 3 medium distances; of which more hereafter¹.

3. *On the ocean as on the land, charges for the carriage of heavy goods in bulk are governed mainly by the costs of the services rendered; while the charges for quick transport at fixed times are in great measure adjusted to demands for the services rendered.*

Britain is the chief home of the shipping industry. The capital, which she has invested in it, is indeed small relatively to that invested in her railways: but her prosperity depends on the smooth working of her shipping industry in an exceptional degree. Norway, New Zealand and Japan also have predominant interests in the sea: but Britain for the present pioneers the way in shipping problems. The best study of monopolistic problems in shipping is that made by the British Royal Commission on Shipping Rings (1906—9): and, as these problems resemble monopolistic problems in general industries more closely than do the problems of railway monopoly, it is fitting that prominence should be given to them here.

Sailing ships used to lay themselves out mainly for cargoes: though they were generally ready to take a few passengers. They might have fixed times for starting; but they could not have even approximately fixed times for arrival at the end of long voyages, and they offered but few amenities: scarcely anyone took a long voyage unless for urgent business. But the economy and efficiency of large steamships have offered increasing inducements for taking long voyages on even slight occasions: and this change, together with the growing demands and resources of the chief post offices of the world, has called into existence great fleets of swift steamships, which make it their first business to attract passengers, and in some cases mails: their second aim is to attract such cargo as can afford to pay relatively high charges for sure and quick transport².

¹ See below, pp. 500—506. Attention has been called (above, p. 297) to the advantage, which a giant retail business is obtaining over local shopkeepers through its power of delivering its goods by a "fleet" of motor wagons: but the issues raised thereby are of a different order from those now in view.

² When business activity is high in America and low in Europe, a million emigrants may go westwards in a single year; and a considerable number of

III, III, 3. The chief advantages which a great "Line" offers to shippers, besides quick transit in well-appointed and secure ships sailing at short intervals, are implicit or explicit guarantees as to the care with which the cargo is handled, and as to the stability of the charges made. These advantages are of some importance in regard to light goods, and small consignments of all sorts of goods. Light goods, which are liable to damage by careless treatment, are not readily consigned to the charge of an unknown person: but the shipper knows that a great Line cannot afford to let them be handled negligently, and he often does not even concern himself to inquire by what vessel they will travel. The more frail and valuable his goods are, the more highly he prizes this speed and security, and therefore the higher is the rate which "the traffic will bear" for them. Again, many foreign buyers desire to have prices quoted to them for delivery at their own ports. It is true that in the case of any particular large consignment, the charge to be made on this account can be ascertained by telephone and telegraphed to the buyer: but for minor consignments, and especially for those advertised in price lists addressed to small buyers, there is an urgent need of charges fixed some time in advance¹.

them return when the conditions are reversed. It is true that the great "Liner" has no exclusive hold on emigrants and others who are content with rough accommodation, provided the charge for it is low. But the carriage of a thousand emigrants on a lower deck of a great ship can be effected very cheaply: their food is inexpensive, and they pay little more highly for space than does first-class light cargo: they even yield a higher rate of net profit on their direct costs than do first-class passengers. In the main the carriage of emigrants belongs to the great companies: expensive organization is required for collecting full loads of emigrants.

¹ This is a matter which has more influence on the courses of international trade than is generally known: its importance is increased by the almost universal tendency of the present age towards keeping ever smaller stocks of each of an ever increasing variety of goods; and replenishing the stocks by small orders at frequent intervals. Liner freight rates are at so much a ton by weight, or "measurement"; the latter being taken at forty cubic feet: that method is chosen in each case which indicates the higher charge.

Differences in value and ease of handling have led to the placing of glass ware in crates in class IV, with clay, chalk, crude forms of iron, etc.; while iron chains, oak boards, etc., were in class II and copper in class I. The rates for class I were nearly twice as high as those for class IV; but as glass pays by measurement, a ton weight of glass pays at least as much as a ton of copper. It may be added that shippers complained of the scarcity of information on such matters; and that even the Commission's inquiries met with but little response.

But these advantages are of relatively small importance to the shipper of common goods in bulk, such as grain, coal and other minerals, cotton, jute, wool, etc. The shipper of such things generally finds it to his advantage to hire, or "charter" one or more cargo ships for the purpose. A great part of the transport of all these things, and especially grain and coal, is done by "Tramps"; that is vessels which have no regular route and no fixed times of sailing, but ever seek those ports at which they are most likely to get good freights. This work corresponds to that of carts on the high road which carry things in bulk. Lines of ships, like lines of coaches (where there are no railways), carry passengers and small parcels¹.

The freedom of movement of Tramps, and their variety of size and speed, enable them to supply whatever accommodation any merchant happens to want, without asking him to pay for capacity or speed that he does not need; and their position is in some respects impregnable. They do not indeed keep freights steady: because harvest variations, and fluctuations of general credit cause the total demand for shipping all the world over to vary greatly from year to year; while the demand at any one port may change violently with but short notice. A shipper anxious to hit some market, where the price of his grain is a few shillings a quarter higher than he can expect if he misses that market, may be willing to pay 10s. extra per ton in order to catch it; and that is a very large addition to the ordinary Tramp rates for most voyages. On the other hand, when accident or miscalculation has brought to a port a tonnage much in excess of the cargo available, Tramps will carry freight at a merely nominal rate in a direction in which they expect to find good employment. But in spite of these great fluctuations

¹ Of course the terms "large" and "small" are relative to the agencies used: a small consignment for a ship would often be much too big for the largest wagon. It requires an effort to apprehend the difference in scale between the traffic of the ocean and that of the land; and some illustrative figures may be of interest. The cargo of a small ship, if set on horse-drawn wagons, would occupy several miles of road; that of the largest ship of the present time would occupy about fifty miles. An efficient modern ship of 5000 tons net register, capable of carrying more than ten thousand tons, will consume but two tons of coal while steaming for an hour at the rate of about nine knots. That is, the consumption of coal fuel needed for carrying one ton a hundred miles is about three and a half pounds, costing less than a half-penny

III, III, 8. from time to time, the average costs of carrying the great mass of heavy ocean traffic are kept down, directly or indirectly, by the competition of Tramps very close to the actual costs of the cheapest method of transport that has ever been known. Thus it may be said that, as a rule, the prices current at ports of delivery for goods carried in bulk exceed their prices at ports of origin on the average of a decade (in which there has been no great war or other violent disturbance) by amounts that are just sufficient to cause the supply of cargo vessels to keep pace with the increase in quantity of heavy freights that are seeking tonnage¹.

Of course the degrees of control over cargo rates which are exerted by Liners and Tramps respectively vary with the circumstances of each course of trade. The tonnage passing between Europe and North America annually exceeds that in all the rest of the trade of the world. But it is largely occupied with passengers; and there is so much empty carrying space in the holds of many Liners that the regulation of cargo rates by them is impracticable: they often underbid the Tramps. Again the coasting trade of Britain is so much controlled by railway competition, and so intimately connected with small local affairs, that it also is not regulated. Again the tonnage required for the trade to Europe from Argentina, Australia, and some other countries is much in excess of that furnished by Liners; and rates are practically governed by the supply of Tramp tonnage relatively to the demand: but more of this a little later².

¹ Various estimates give to "Tramps," in the broad use of the term, from five to eight-tenths of all the existing shipping. Agreements among them as to rates are rare; for it seldom happens that any one of them has a special interest in any particular route. On the other hand there are signs of the appearance of great lines of cargo steamers, with strong capitalistic backing; and, partly for this reason, it seems possible that the conditions of heavy cargo traffic may approximate in some degree to those of passenger and light cargo traffic. The charges made during the world-war of course belong to a class by themselves.

² The influence of Tramps is now strongest in grain trades, and especially in the wheat trade. Of course coal cargoes are vastly heavier in the aggregate than grain cargoes. But coal is often used by outgoing Liners and cargo-ships to make up their loads; sometimes it is used for the return journey either by the ship itself or by another belonging to the same owner; sometimes it is left at a coaling port. Consequently no attempt is made to regulate the freights

4. *The growing concentration of a large part of the oceanic passenger and light goods traffic in the hands of a relatively small number of powerful companies; groups of which often act together in "Conference."* III, III, 4.

We saw in Book II how (the progress of technique not only increases the size of the plant which can be worked by a given number of men, but also increases the efficiency of powerful plant more than in proportion to its cost;) and how these changes tell on the side of the large business relatively to the small. We saw also that these influences of progress have been specially conspicuous in the building and mechanical working of giant ships. Moreover such ships can afford a high class of professional service, including that of wireless telegraphy by night as well as by day, and other amenities. These direct influences, tending to strengthen the companies that are already powerful, are indirectly supplemented by geographical causes which concentrate the best part of a country's trade in a small number of ports, and thus further promote the expansion of a company that is already powerful. For large ships need deep entrance channels; and powerful mechanical appliances, that will load or unload several thousand tons in a single day: a small port cannot do this unless aided by some public authority, or by a railway that reaches the ocean at that port. Railway enterprise and geographical causes in America and England, but notably not in Germany, have opposed important resistance to the overmastering predominance of a few great ports.

This geographical concentration is both cause, and effect, of a continual increase in the range covered by a great shipping Line. Partly by amalgamations or working agreements with other Lines, and partly by setting up subsidiary lines of its

for coal: the supply of tonnage at coaling ports is generally much in excess of the demand.

Both ordinary Liners and Tramps are yielding some ground to lines set up by great railways to ply from ports served by them: also to lines specially adapted to carry oil, or perishable fruit or cattle. These last can often carry passengers advantageously; for cattle and perishable fruit as well as human beings, need speed and some care in handling. Those that bring butter, fresh fruit and vegetables from the Continent to England are very swift; and, even when they arrive at night, their cargoes are often unloaded and sent off by quick trains, so as to reach the industrial districts the next morning.

III, m, 4. own, it is able to take efficient measures for attracting custom: and it thus gets the better of any competitor, who follows the old easy-going plan of waiting to be sought out by those who have cargo to send. Its position is strengthened by its ability to collect, on through bills of freight, cargo from almost any port on one long line of coast, extending perhaps along several countries; and to deliver it at almost any port on another long line of coast: the equipments of the great ports, between which its main lines run, facilitate transshipments, when necessary. On both its main and its subsidiary lines, it is likely to make use of cargo steamers, of various sizes, as occasion demands: and it may even make some use of Lines of cargo steamers, with fixed time tables. It generally owns some of these steamers; and "charters" others by the year or for particular tasks¹.

A great company owning or controlling some fifty steamers of various sizes is able not only to pick up and deliver freights at many ports, but also to adjust the tonnage which it is running on any particular route to varying demands. It can advise any of its customers, who have about equally good access to two or more ports, to send their cargo to that one from which one of its vessels is on the point of starting for the particular destination which he desires; it thereby obtains some of the economies possessed by a giant business, such as the United States Steel Corporation, of being able to direct any particular order to that one of its plants which has at the time the best facilities for it. As a canvasser for custom it has some of the advantages of a Branch-shop Company².

¹ By these means it escapes the necessity of carrying heavy cargo in bulk on expensive ships, with high coal consumption; unless indeed the ship happens to need ballast. Such things as steel rails are often taken at rates even lower than those generally charged by a cargo ship, for they serve instead of water-ballast: in fact, before the days of water-ballast they were said to be sometimes carried gratis.

² It may be well to go into some details as to the position which the chief German line had reached in 1913; after having absorbed many others, and formed a close alliance with its leading rival. A great part of the trade of the central and western States of North America has about equally good access to the sea at any one of several great ports on the coast line between the St Lawrence and the Mississippi: and a large part of the whole American trade with Northern Europe has a nearly even choice among several ports in Britain, France, Belgium, Holland and Germany. The Hamburg-Amerika line, working in unison with the Norddeutscher Lloyd of Bremen, had attained in 1913, an absolute control of the

The great lines generally have sufficient space for all the high grade cargo that is offered. If it comes forward in unusual quantities, they make room by declining lower grade freight; and consequently their charges for high grade freight are liable to less fluctuations from passing accidents than are the charges for low grade cargoes in bulk. On the other hand the standard charges made by Liners are not governed by large economic forces as directly as are the average freights paid to Tramps: they are governed by the estimates which a company or a Conference forms of the net revenue to be derived from various rates of charges; the highest rate being chosen, that will not greatly check the normal flow of trade into their hands. But charges may be oppressive to those who pay them, without exceeding the limit suggested by this rule. And against such charges, the starting of an effective independent line of steamers being generally out of the question, the only remedy is to be found in expressions of public opinion, which may culminate in an agitation for the intervention of Government. III, nr. 4.

(Thus the general trends of the technical and financial developments of the shipping industry favour the extension of partial and conditional monopolistic control over an ever larger portion of its work.) There is a constant increase in the variety and the importance of the services which a giant company can render to innumerable customers; few of whom could find any tolerable substitute for its assistance, unless from the appearance on the scene of a rival company of similar scope and strength. The immediate result of such an arrival is usually a fierce rate-war: the deferred result is often either a fusion of the two companies,

direct trade of Germany in the Atlantic Ocean. But the competition of lines serving other ports of North-Western Europe remained strong enough to insure a moderate use of that power, in regard to transoceanic trade and, in order to suppress that, it was said to maintain, in conjunction with its allies, a "fighting fleet" of nine ships valued at £300,000 for the purpose of fighting opponents and "nursing" them out of existence.

According to the *Report of a Committee on the Shipping and Shipbuilding Industries*, 1918 [Cd. 9092], p. 95, nearly all the German lines were associated before the war in a *Rhederei-Vereinigung*. "A Contract with any one of these lines was a Contract with the group." Germany's concentration of her chief trade in two associated ports is an aid to the organization of her shipping trade, though an injury to her industries.

III, III, 4. or else a "Conference" between them. The Conference sets up a common schedule of rates, while leaving for the time some room for competition as to prompt action, and other facilities and amenities. But this competition generally fades away rather quickly; very few vestiges of it being left, even before the complete fusion of the two has been effected. Such a fusion is not unlikely to be made the occasion of a further fusion with one or more other companies, whose routes overlap more or less those on which the competition was first set up; for the power and the appetite for extension are apt to grow with every increase of it.

A great company or a Conference of companies thus obtains control, which is not indeed absolute, but is yet practically undisputed for the time, of all that part of the trade of its special area, that is not suitable for Tramps. It can therefore act very much as though it had an absolute monopoly of that trade: that is, it can distribute the general costs of its business as may seem best in its own interest, and charge the rate that will yield it the highest net gain for each service, account being taken of the urgency and elasticity of the demand for that service.

There is however less that is arbitrary and accidental in the apportionment of charges for ordinary consignments of different sorts of goods than appears at first sight. Long established usage, based in some degree on sound reason, has set up the general principle that goods are to be classified for high or low charges per ton (by weight or measurement) roughly as their values are high or low; provided the difficulty and the risk of handling are about equal. The several classifications set up by different companies and Conferences differ in detail, according to the conditions of the routes of trade with which they are associated: but all conform to this general principle, which came to be regarded as reasonable or "natural" long before the shipping industry entered on its present phase; and will probably be so regarded long after that phase has passed away. It is maintained in great measure even in an eager rate-war for the exclusive or partial occupation of any area of trade: rates may be lowered generally; but a proposal to carry first-class goods at fourth-class rates would be regarded as short-sighted even during the heat of the combat.

But though there is relatively little that is arbitrary in the classification of goods by a Company or Conference, a somewhat high charge can generally be put with safety on any particular class of traffic, which has not sufficient volume to attract a competitive service, and is not suitable for the Tramp. It runs indeed a considerable danger of inviting opposition from an independent Line promoted by shippers, or from an existing Line which is called by them to their aid; if the general level of its rates is much in excess of that needed to cover its costs with good profits. But, in spite of the keenness of modern commercial competition, this danger to it is being diminished. For not only is there a rapid and ceaseless increase in the capital outlay required for setting up a new Line, or even a branch of an old Line, on a scale sufficient for effective competition: but further, in spite of occasional wars on a great scale between Conferences, their mutual understandings and alliances have grown almost as fast as the resources under the control of each of them. This fact indeed contributed greatly to that feeling of unquiet among shippers, which evoked the "Royal Commission on Shipping Rings" (1906—9)¹.

This association of Conferences is a matter of but little direct concern to the Tramp: for she has no fixed route and presents no good target for their artillery. So they turn their attacks not on her, but on any who make use of her for work which they are ready to undertake: they think it an unfair competition for the Tramp to come in when things are good and drop out again when things are bad. They are not able to eliminate the "fitful tramp" from the regular trades: but their weapons are turned against anyone who sets up a regular

¹ The *Report* of the Majority of the Commission, § 35, states that "each Conference has its own area, and in certain cases, where several trade routes intersect or adjoin one another, the various Conferences have understandings or agreements with one another to respect each other's spheres of influence. This is especially evident in the trade with India and Ceylon, which is in the hands of a group, or family, of Conferences, related to one another, members of each of them being also members or part members of other Conferences. Such interdependence secures a harmony of action in the working of these various bodies, and it prevents the clash of interests which might ensue, were Conferences free to engage in mutual competition." Also two groups of Conferences, which serve the same area, generally abstain from encroachment on one another, "not so much from fear of retaliation."

III, III, 4. Line of cargo steamers, which may divert traffic from the Conference¹.

It is of course possible that the economy and efficiency, which can be attained by a vigorous and unselfish use of monopolistic power in such a case, may on the whole be to the advantage of the public. The absolute monopolies granted to England's early Joint Stock Trading Companies have already been recognized as working for the general good, so long as the special conditions which had called for them, were still in existence: and the conditional monopolies possessed by some modern shipping Conferences claim to render some important services. No doubt (as was seen in Book II) some wastes of competition are conspicuous in the struggles of almost every class of producers, and of wholesale and retail dealers: and it is obvious that very far-reaching wastes are likely to be caused by rate-wars between competing Lines of steamers. The public undoubtedly gains something from agreements which keep rates steady, and enable producers and merchants to quote prices, cost of delivery at a distance being included².

The leaders of the Conferences claim that these ends are achieved by them, and cannot be achieved otherwise. They claim also that their charges are not in excess of those which are needed to yield fair profits to a well managed company in

¹ These statements are taken substantially from the evidence, not always very willing, of Mr Byron, representing the South African Conference, whose affairs occupied a large part of the attention of the Commission (see Q. 15,374—9; 15,470—5). He further admitted that "the business man in South Africa has no choice: he must come to the Conference, unless he chooses to charter vessels" on his own account (Q. 15,736—7). And yet it was maintained with some persistency that the Conference had no monopoly. Thus Sir Donald Currie said (Q. 15,016). "The whole truth is that Conference Lines have not any monopoly at all." Mr Byron asserted "emphatically" that the Conferences have not "by virtue of this system of rebates anything like a monopoly.... That lies at the root of [my] argument" (Q. 15,270—1). But he was gradually forced to admit that what he meant was that "there is not a complete and absolute monopoly.... There is something of the nature of a monopoly; that goes without saying." In answer to the suggestion that "the very object of the deferred rebate system is to create a monopoly," he says "undoubtedly it has that tendency," and that "the object of it...is an actual monopoly" (Q. 15,493—8). These quotations illustrate the difficulties inherent in the common elusive uses of the term "monopoly."

² But shippers complain that, though the Conferences publish their rates for each class of goods, they seldom publish their classifications.

a normal year: and that the means, by which they exclude the competition of interlopers, are reasonable in themselves. A judgment of these claims must turn in some measure on the nature of the weapons; with which they combat interlopers. The chief of these has recently been that of "Deferred Rebates" which, as already said (p. 234), raise questions similar to those of the "tying clauses" in boot and other industries. III, III, 5

5. *The uses of Deferred Rebates as a means of insuring the loyalty of a shipper to a steamship Company or Conference; and their abuses.*

The system of Rebates or discounts to those who deal exclusively with a particular company is very old: (but the plan of withholding the rebate for a long time, in order to keep the shipper in what he regards as bondage, was begun late in last century and soon became general in the outward trades.) For reasons already explained the homeward trades from the East and South generally include so much cargo which is specially suited for Tramps, that regulation of the rates in them is impracticable: but the exceptional lightness of the homeward trade from South Africa made it amenable to regulation.

A Memorandum, submitted to the Commission on Shipping Rings on behalf of the South African Conference, contended that "the facilities and advantages offered by the various lines, which enable shippers and importers to carry on their business with regularity year in and year out, carry with them a moral obligation on the part of shippers to support the regular lines." This obligation is said to be recognized by many shippers: but in order to bring pressure on others, the Conference Lines have set up a "bargain" with their merchant customers, which in effect says: "We will provide you with a regular and sufficient service, if you, by giving us all your business, will afford the demand essential for that supply."

This contention is not *primâ facie* unreasonable: for it is of course a common practice to make lower charges in some cases to regular than to irregular customers: an annual railway ticket likely to be used for six hundred journeys may be sold for the equivalent of two hundred ordinary tickets, or even less: and shopkeepers at a summer resort may fairly charge rather

III, III, 6. higher prices to summer visitors than to permanent residents. But some actions, which are harmless in ordinary cases, may work injuriously when backed by monopolistic strength. And it is an open question whether the principles by which the general obligations of common carriers are governed, should not exclude the right of a company to use its sole possession of facilities, which are specially important for some kinds of traffic, as a means of compelling other kinds of traffic to be sent by it. The old notion, that a common carrier had obligations to the public, was associated with the notion that he often has some sort of local monopoly, as has already been urged: and coercive measures by great Lines, have certainly grown with the growth of their monopolistic strength¹.

6. *Some general inferences. The functions of an authoritative Commission of inquiry in compelling publicity; and in promoting measures for the interests of the general public on matters, which cannot be fully understood without expert knowledge.*

We may pass to some inferences which the *Report of the Commission on Shipping Rings*, 1909, suggests as to the nature and limits of the profitable intervention of Government in regard to uses of monopolistic power by a great aggregation or confederation in an industry, which must maintain a large scope for the untrammelled exercise of free initiative. We are to see presently how American experience is pointing towards a larger use of permanent regulative Commissions in regard to industrial aggregations of all kinds, in order to grapple with the ever

¹ *The Economist*, January 5, 1918, quoted, as recently issued, a manifesto by the Council of the Associated Chambers of Commerce, in which the system of shipping rings was condemned on the grounds, among others, that "it develops into a restraint by coercive means of British manufacturers and merchants; and that, even if not so designed, it tends to the crushing out of competition in ocean sea carriage by British tramp steamers": also that it tends to restrict the formation of new lines; to "maintain artificially high freights"; and to "make agreement with foreign shipping lines to the prejudice of British traders, who are not members of the Conference lines." From another point of view a representative of Manchester warehouses had complained that, though the war had stayed the preference which Conferences had secured to some German export trade, they still caused an immense quantity of Manchester goods to be shipped via Liverpool or London, which obtained exclusive favours from the Conference. See *Economist*, Dec. 1, 1917, pp 871 and 885.

increasing power of destructive competition, which is being III, III, 6
acquired by concentrated capital. But, with some partial exception for railways, Britain has not yet felt a great need for such drastic action: and, from her point of view, exceptional interest attaches to investigations of particular difficulties by the authoritative Commission on Shipping Rings.

We are told how representatives of the Conferences confidently asserted on their behalf that "self-interest is an adequate safeguard, and that a Conference could not exist very long" if it were to "use its position for the exclusive use of its shareholders, and to the prejudice of its customers." That is probably true; so extreme a policy would be "suicidal." But the public interest may suffer much from a selfish use of power that is less extreme. A prudent ruler of a conquered province will not adopt such extreme measures as are likely to incite rebellion, or an appeal for external intervention: but he may be glad to draw a goodly revenue for himself, and to cover the expenses of a strong military force against any who might challenge his dominion. A Conference may be tempted in like manner to incur great expense for strategic purposes; and to throw a considerable part of that expense on its customers. If its exclusive hold on the traffic had been absolute and permanent, it would have set the charge for each service at that level, which would yield the maximum net revenue: and, when it incurred any unforeseen expense, which could not be affected by any alteration in its charges, it would have written that expense off out of the value of its property, and kept its charges unaltered. As things are, its monopoly being conditional and not absolute, it is not likely to have ventured to put its charges up to the highest monopoly levels: but it may on the whole conclude that its position will be less endangered by raising its charges a little nearer to those levels, than by stinting expenditure for the confusion of any assailant whether actual, or merely anticipated. This indeed seems to have actually occurred¹.

¹ For instance, shippers represented to the Commission that the number of ships kept up by the South African Line was in excess of the needs of the traffic; and that the inconvenience to them caused by the removal of the superfluous ships (having of course in view the fact that Tramps would respond quickly, though perhaps not at very low charges, to any unexpected increase of heavy freightage) would be less than that caused by paying the charges, which the Company found necessary in order to cover their outlay with profits. But

III, III, 6. The problems of the shipping industry are remarkable alike for their magnitude, and for the multiplicity and complexity of their detail. The carriage of goods a certain distance in a certain time and with a certain amount of careful handling, is a definite thing from a physical point of view; but, from an economic point of view, it varies with the nature of the route to be traversed; with the changing conditions of demand and supply on that route and on the return journey; and some other considerations. It is therefore not suitable for minute Governmental control, and still less for Government undertaking. But nevertheless Government has distinct functions in regard to it, when in a healthy condition, and still more when it has fallen into malaise of any sort.

The chief successes of the medical treatment of bodily ailments have been achieved by measures which tend to give free play to the remedial forces of nature. The chief of the remedial forces of nature in regard to human action is knowledge: and nearly all beneficial intervention of authority in social troubles begins with the acquirement and publication, voluntarily or under compulsion, of information, which some of those interested in the conflict are not likely to offer spontaneously. Many exaggerated complaints, when formulated under pressure, and set out in clear light, shrink up even before they have been answered. And, on the other side of the case, upright men are often half-way converted towards removing such just grounds as there may be for complaint against their conduct, by reading a well-informed and well-balanced statement of those grounds; and knowing that an impartial public is forming its judgment on them. In this and many other ways a careful authoritative inquiry, with publication of the evidence taken, goes a long way towards removing sources of social harm; though it may have no legal power of compelling answers from recalcitrant witnesses, and its specific recommendations in regard to authoritative intervention do not carry very far.

to this Sir Donald Currie (Q. 15,214—6) answered:—"We do not know when busy times may come; and, if our tonnage were reduced considerably, we would not have the steamers there, and somebody else would put on the steamers." He did not attempt to prove that such a result would have been injurious to South Africa, and that therefore she might reasonably be asked to contribute towards the expense of preventing it.

Much helpful knowledge comes to a Commission of Inquiry III, III, 6 spontaneously. For there are nearly always two, often more, sets of persons who have intimate technical knowledge of, and strong interest in the subjects investigated by it. Each set puts out its own case vigorously, and spares no effort to bring to light any flaw in statements or arguments that make against it: and thus, so far as the trade interests of any important group of people in the country are concerned, the Commission may sometimes rest content with keeping a fair field for all combatants, and sifting out the vital from the secondary and even irrelevant issues that may be raised. But the interests of those who can offer careful, well-informed, and well-organized evidence are often less important in the aggregate than those of the public at large; who seldom have the special knowledge required for ascertaining exactly where lie their interests in the matter under discussion; or the organization required for setting out their case. The Commission is required to take some initiative in regard to the interests of the non-vocal multitude, in order that it may present a well-balanced picture of the whole position. Thus one of the chief services rendered by public inquiries in various countries (especially in regard to such complex problems as those connected with conditional monopolies) lies in their presenting the points of view of able men; many of whom have no personal interest in the subject under discussion, while they have yet a familiarity with its general scope, and even with its more important practical details, such as seldom can be attained by any save those whose judgments are apt to be biassed by their own special interests. The main Report often lays chief stress on the questions at issue between those most directly interested in the subject under investigation; and sometimes the indirect interests of the public at large are specially considered in Minority Reports.

Thus a strong minority of the Commission on Shipping Rings called attention to the fact that the persons *immediately* interested in the policy of the Rings are not those on whom its main effects are likely to fall in the long run. They are "the merchants who buy goods in one country and sell them in another; and they can generally readjust their dealings to suit the rates of freight, and in this way transfer the direct loss from

III, III, 6. excessive rates of freight, or other increase of charge, to the producer or the consumer. . . . The producers and consumers, who are really more interested in the question than the merchants, are affected only indirectly as a whole, and they have very little power of combination for such a purpose as meeting and counteracting the combination of Shipping Rings¹." These remarks point to the conclusion, which the much larger experience of America in such matters tends to support that, where a powerful monopoly is threatened a body of experts should be set to inquire *ne quid detrimenti Respublica capiat*; and to suggest remedies to be enforced by appropriate authority: as to which more will be said later on².

¹ Report, vol. I. p. 97.

² Traders often rejoice quietly in the imposition of increased taxation on a thing in which they deal, if they have good reason to believe (1) that the demand for it will not greatly shrink in consequence of an increase in its price; and (2) they are sure that all their competitors will pay the same price: for they then expect to pass on the tax, augmented by profits for themselves on it, to the consumers. Accordingly shippers welcome certainty as regards the rates charged for their cargo, even if the rates are somewhat high: and they regard with satisfaction the promise by a Conference, that so long as loyalty to it is secured by deferred rebates or other means, the shipowners will never carry cargo on their own account. But that undertaking, though eminently agreeable to the shippers, tends *primâ facie* at all events to increase the costs, which the non-vocal public will pay for the services they need.

The Majority Report of the Commission on Shipping Rings recommends that "where it appears to the Board of Trade that there are good grounds for believing that important national or imperial interests are affected" the Board of Trade shall have power to institute a special inquiry; and, if it thinks fit, to present a report on it to Parliament. The Minority Report goes further; and recommends that "the Board of Trade should be free to direct an inquiry . . . when it appears that important public interests (including those of consumers and producers) are affected by the action of Shipping Companies," and that it should report to Parliament promptly the main results of such inquiry.

The Majority give support to the claim that the services, which Liners render and the public need, could not be maintained without monopolistic control. But their reasons are disputed by the Minority with arguments so strong, and based on answers to such searching questions by themselves and some other members of the Commission, as to seem to incline the balance of evidence against that claim.

It may be added that the South African Conference, partly under pressure from the Union Government, has given up the system of rebates for the time at least; and substituted an arrangement, under which the merchants agree to confine their shipments to the regular Lines engaged in the trade; while the Lines undertake to maintain their services, at uniform rates of freight mutually agreed upon. This arrangement has however been charged by some shippers with effecting abuses similar to those imputed to the system of rebates.

CHAPTER IV

COMPETITION AND MONOPOLY IN TRANSPORT, CONTINUED

1. *Introductory.*

III, iv, 1.

It has already been observed that (the advantages which a railway company derives from the exclusive occupation of a great thoroughfare have little counterpart in other industries;) and for that reason the study of transport industries for the special purposes of this Book has begun with problems of transport on open courses on land and sea. But incomparably the largest and most instructive experiences, which the world has had of semi-monopolistic power, sufficiently strong to raise problems of public interest, have related to railways.

The tendency towards combination, or cartellization, which we have seen in the development of shipping companies, is now showing itself increasingly in railway combinations and agreements; and yet the main substance of railway problems resembles that of problems of giant manufacturing businesses, which have not come definitely under the dominion of a cartel: for each railway has still a strong, almost absolute, monopoly of some local traffic. But long distance traffic, especially for goods, is on the increase; and this opens ever new competitive activities; in ever-shifting relations with combination. This in its turn has awakened new jealousy, and evoked authoritative restraint. Thus few important railway problems can be solved by reference to the abstract principles of pure monopoly; but there is no other field of economics in which problems of conditional monopoly are so numerous, so large, and so various.

(The study of railway science has now its chief home in America. Nowhere else are the financial aspects of railways so

III, IV, 1 prominent nowhere else would railways, acting in uncontrolled concert, have so complete a mastery of the whole resources of the country, or so despotic a power of deciding what districts should flourish, and what should languish) But the people have been little inclined to let such giant strength work uncontrolled. Railways have been the chief mark of popular criticism, just and unjust tyrannical exactions have been met by organized mob-violence: and the thoughtful American has been put on his mettle to consider what part of a railway's freedom to do as it liked with its own was reasonable, and what part threatened commercial and even social stability¹.

For a long while the light thrown on railway problems did little more than make darkness visible: but gradually some leading principles emerged which served as guiding lines through many difficulties. An Interstate Commerce Commission was set up. Massachusetts and other States had Intrastate Commissions to regulate local traffic. Recently a great number of shrewd minds, with and without special technical knowledge, have considered complex railway problems with care and the expert American literature on the subject, official and professional, is of exceptional volume and authority.

Britain and the United States are alike great industrial countries, with the strength and the weakness that comes from popular government; and thus their administrative problems have a closer kinship with one another than with those of any other great industrial country: for neither of them needs to put military considerations in the forefront of her railway policy; and each of them governs her own Government.

But the physical conditions of the two are wide apart (They cause goods traffic to predominate over passenger traffic, and long distance traffic to predominate over short in America and in Britain they reverse these proportions) Again, British railways have paid higher prices for their land than any others, while American railways have obtained much of it gratis, and

¹ I attended a "Granger" (i.e. farmer-in-revolt) meeting in San Francisco in 1875, and one of socialists at Frankfurt a year or two earlier. In both the discourse ran chiefly on "the enemy" But in Frankfurt, the enemy was capital, in San Francisco it was the railways, though in other respects the two discussions were much alike.

have often received direct subsidies, chiefly in the form of land. III, IV, 1.
 Again, British railways settled down to quiet policies in the middle of last century; but violent financial struggles for mastery clouded American railway history during most of that century, and have even trespassed on this. For these reasons, it seems best to follow the course of British railway policy in the present chapter, with but little attention to parallel details in American railway history. though, in matters of fundamental principle, guidance must be drawn largely from American sources.

Next in importance to the railways of America are those of Germany. There is a notable contrast between the financial success of Governmental ownership of railways in Prussia, and its comparative failure in every other part of Germany, as in all other countries in which it has been tried without some exceptional advantage. The chief causes are to be found in geographical conditions¹.

It might have been expected that Prussian love of order would have evolved a uniform rate of charges for a given amount of transport of a given quality over a given distance. But the practical exigencies of traffic in various regions gradually

¹ A great part of the population of Prussia lives near the level of the sea, in land so flat as to require but few tunnels, and not many railway cuttings or embankments. She bought her railways cheaply before the strength of Westphalian coal and iron from Luxemburg, Lorraine, etc., combined with other causes, had enabled the country to rise from relative poverty to wealth. None of these advantages accrued to the other States which own their railways: in some of them railway making met with natural difficulties as great as those which have increased the cost of British railways. And, what is of even more importance, by far the greater part of Germany's external trade, as well as of her own heavy internal trade in coal, passes over Prussian lines to Hamburg or Bremen, or to Russia. In these respects the finance of Prussian railways has a unique advantage. If the whole of the railways of the southern half of Germany had come under an excellent Governmental control, they could not have fared well in the face of Prussian control of the northern half. Some of these considerations are emphasized in Prof. Schumacher's instructive eulogy of Prussian railways at the memorable congress in 1912 of the British Royal Economic Society. He says that "in the lesser German States the nationalization of railways has proved a bad bargain. In Bavaria, Baden, Wurtemberg and Saxony they yield only about one half the rate of revenue yielded by the Prussian railways. Wurtemberg even shows a deficit on its railway working returns" (p. 46). It may be added that the German railway returns, which are reproduced in a H. of C. paper 1913, No. 287, are not easy of interpretation for the capital accounts of German State railways do not always disclose all the facts. In some cases the railway debt is not even clearly distinguished from the general State debt.

III, IV, 1. broke up the simplicity of the original design. Allowance is now made for water competition; for the needs of particular industries, general and local; for competition with routes in which external railways bear a dominant share; and for special rates in favour of the export trade, and the final result is a highly complex table of the freight charges levied on the most completely homogeneous great system of railways in the world. The Prussian Government has set up a number of Councils, in each of which leading business men of a Province can urge concessions to particular local interests; and their suggestions are generally adopted. This in Prussia, as well as in Britain and America, monopolistic tendencies are restrained in great measure by indirect competitive tendencies; and, where their course might otherwise run freely, they are curbed and directed by authoritative control, more or less under the influence of general business opinion. We shall return to this class of consideration later on¹.

In Britain the relations between monopolistic, competitive, and authoritative influences have changed with the development of the railway map. In very early stages, most of the traffic of each railway has been free from the competition of other railways; though it may have suffered a good deal from the competition of other methods of transport. In the next stage, competition among railways has directly increased: but a little later on, that has often fallen into the background; though indirect competition of various kinds has taken its place to some extent. But meanwhile general attention has been called to the evils that might arise from concerted action by all the chief railways serving any one district: and railways have been restrained from all extreme uses of monopolistic power; if not by actual authoritative edict, yet by the fear of inviting it.

¹ A good account of the German Advisory Railway Councils is given in the *Report of the Board of Trade Railway Conference, 1909* [Cd. 4677], pp. 83—92, and 109—112; where they are described as "exercising, if not actual, yet a certain moral pressure on the authorities." They have contributed to the multiplication of special (*Ausnahme*) rates, which in 1906 already covered nearly two thirds of the goods traffic on Prussian railways; so that, in spite of some efforts at simplification, there were nearly a thousand different rate-books in operation (ib. pp. 98—105).

It may be said that the British railway industry pioneered the path of public policy in regard to the authoritative defence of general interests against the abuses of overmastering strength. Its problems are unlike those of any other great country; though those of Japan and New Zealand may develop on somewhat similar lines. For it has no heavy through traffic: and, with a partial exception for coal, it has comparatively little heavy internal traffic. It has been deprived of much specially remunerative traffic by coasting steamers: and in return it has taken from canals traffic which they might have been able to work more easily than it can. These two considerations are often ignored: but they will be found to explain the chief peculiarities—good and evil—of British railways, and something must be said about them.

The foundations of modern railway science were firmly laid by Lardner's *Railway Economy*, 1849. He attributed the complexity of its problems mainly to "the variety of the services rendered by a railway, and their remoteness in time from the outlays involved in its construction." But, when he wrote, not very many miles of well made railway line had been at work for more than a single decade: and since his time light single tracks have been displaced by ever heavier double, triple and quadruple tracks: short cuts have been made, sharp corners have been rounded off, and steep inclines have been moderated. Each successive generation has regarded the representative type of railway of its own times as fit to exercise an enduring monopolistic sway within its own region; but in fact new developments have demanded new provisions: broad details are ever changing, though fundamentals remain nearly as they were in 1850¹.

¹ Lardner's work is a fitting companion to Babbage's *Economy of Manufactures*, 1832. Each of them set the main principles of an important branch of applied economics with so much constructive genius, that subsequent study has confirmed them, even more than it has enlarged them; while some of their results are often ignored even now. There are few controversialists on either side of the dominant railway issues of the present time, who might not learn much from Lardner. His work is thoroughly English: but the chief obligations which he records are to analytical studies made in Belgium and France.

The slight touches of mathematical reasoning which are to be found in early books on railway science, have been greatly developed by Launhardt, Colson, and others. The brilliant work of Edgeworth and Pigou has special claims

- III, IV, 2. 2. *The configuration of Britain and the habits of her people are responsible for the fact that most of her goods traffic consists of small consignments, carried short distances; and therefore at high average costs per "ton-mile."*

Railways grew out of difficulties of heavy transport (especially when mud was thick) at mines, quarries, docks, etc. The motive power was supplied at first by men or horses; and afterwards by stationary engines: and it was long before railways attempted seriously to compete with inland water traffic, drawn by horses, for the carriage of common products in bulk. They sowed their wild oats in "the forties"; and during the subsequent seventy years have progressed quietly, doing great things, but making little history. A short account of their early struggles is given in Appendix M, 1: we may pass at once to the immediate antecedents of present conditions.

The most profitable part of the work of almost every railway system is its goods traffic: and the most profitable part of that is the carriage of great loads over great distances without break of bulk. For though the charges per "ton-mile" (that is, for carrying a ton the distance of a mile) in such traffic are nearly always exceptionally low, its costs are even lower in proportion. There is little or no shunting; the consumption of coal, and the expenditure of labour are low relatively to the ton-miles accomplished; and a much larger volume of goods traffic of this kind than of any other can pass over a line in the twenty-four hours.

The ocean is now a mighty purveyor of such traffic to the railways of North America; and in a less degree of Central

on English readers. But their route is not followed here: for mathematical analysis cannot easily be applied to *conditional* monopoly: it is almost constrained to start with the hypothesis of *pure* monopoly, and gradually to introduce successive limitations, corresponding to the various limitations and restrictions which are imposed on railways by various circumstances, and especially by the guiding and restraining influences of public opinion and authority. On the route taken in the present chapter and the next, railway problems are seen in the first instance as concerned with conditional monopoly; cases, in which monopoly is in effect almost absolute, being treated as exceptional. Each route for the study has its own advantages: the two should meet at the end; as do the Eastern and the Western routes to Australia. The route followed in these chapters seems the most appropriate to the general purposes of Book III.

Europe. But the like services which it renders to English III, iv, 2. railways are relatively small: and they are diminishing under the rapidly growing economy and efficiency of steam coasting traffic. In early days, traffic between the eastern and western coasts of England had gone frequently by canals, rather than by sailing ships; although the canals were narrow and shallow, and had to pass watersheds many hundred feet high, by tedious locks: for delivery by canal boat was often quicker, and more capable of being guaranteed true to time than was delivery by sailing vessel. One of the first achievements of the relatively slow and costly paddle steamers of the second quarter of last century was the complete defeat of canals in this trade. For a while the railways made a strong bid against the steamships: but the ships increased in speed and economy so much faster than the railways did, that they quickly took over nearly all of that trade: and very little long distance heavy traffic was left for the railways, except that in coal to inland consumers¹.

Meanwhile the number of great industrial and trading centres, from which wholesale and retail dealers can draw supplies, has continually increased, as was noticed in Book II: and the growing changefulness and imperiousness of demand have caused the stocks, which dealers hold, to diminish relatively to the number of different things in them, and in many cases to diminish absolutely. Consequently wholesale dealers occasionally, and retail dealers habitually, have found themselves in need of small consignments sent at short notice. Many of these travel as parcels by passenger train; but the remainder are an increasing part of the goods traffic. With ever lessening

¹ It is indeed true that, though London has good access to the sea, yet half her coal comes now direct by land. But it is to be remembered that many seams of coal, which were near tidal water, were for that very reason exhausted long ago: and a great part of such coal as can easily reach the sea is exported. If coal has to travel by railway to the sea, and again from the sea to the consumer; then, even though the railway journeys be short, the cost of double transshipment is likely to give the advantage to coal sent in wagons direct from the mine to the consumer, or at least to a railway station in his immediate neighbourhood. Gas and electricity companies and other large consumers of coal often seek tidal water in London and elsewhere. But small consumers draw nearly all their supplies from railway stations; the cost of local delivery, though perhaps the lowest attainable under present conditions, being high even for short distances.

III, iv, 2. competition as to charges, railway managers have set themselves to attract traffic by speedy delivery: they have sent off each consignment as soon as it arrived; often even giving it a truck to itself, if there was nothing else going to the same destination, unless it was very small indeed. So they are loath to bring the large wagon into general use; although, when full, it weighs less in proportion to its freight; occupies less space on the line, and is more economical in other ways than a small wagon. And, partly in order to lessen the total time occupied in the journey of a consignment from sender to receiver, the railways perform themselves, and include in their ordinary charges, some services, which elsewhere are left to the individuals concerned or subsidiary transport agencies: this practice causes the charges made on British railways to appear higher, relatively to those in other countries, than they really are.

These and similar causes have given a peculiar character to English railways, which differ from those of other great industrial countries of Europe somewhat in the same way as those differ from the railways of America. Wherever much long distance heavy traffic must go by railway, plant and charges are adapted mainly to its requirements: and heavy engines draw long trains of large wagons loaded with freight; which pays high charges per ton for each average journey, but very low charges for each ton-mile (that is, for each mile that each ton is carried). An American train often carries more than a thousand tons in fully loaded wagons, holding from thirty to fifty tons, for more than a thousand miles with scarcely any break of bulk. The majority of British goods trains, other than those loaded with coal, are made of small wagons destined to deliver a multitude of consignments, averaging some two or three hundredweight, or even less, at a multitude of stations.

Hence arise two results, which will occupy our attention a good deal. Competition for traffic between two British routes, whether each be wholly by one railway or made up from portions of two or more, turns more upon the incidental conveniences offered by the several services, and less on the charges made per mile, than is the case in many other countries and especially in America. And secondly, statistical records of the average charge per ton-mile of goods carried, if ever they

should be collected for Britain, would show a much higher level than those of many other countries: partly on account of the special facilities, to which British railways are forced to devote much money and care; partly because the heavy charges, which forwarding agents make in other countries for similar work, are apt to be left out of account in international comparisons. These agents often delay consignments till they have enough for a single destination to enable them to claim a lower rate of charge than that for small consignments. An Englishman generally prefers a prompt service to one that is rather cheaper. Perhaps this preference is sometimes carried unreasonably far: but a fair comparison of two railway systems in regard to efficiency and economy requires that full allowance be made for economy of time¹.

3. *Britain's railway map shows the fortuitous results of competition; and her passenger service is very costly: but the economy of time resulting from frequent rapid services on parallel lines is perhaps worth more than its cost.*

We may next consider the rule that density of population shortens the average railway journey; and raises the benefit which the public derive from a great choice of trains, in comparison with that which they get from low fares and low rates for the transport of goods. At the same time, it enables charges for the cost and upkeep of the permanent way to be divided among a great number of passengers and tons per mile: it therefore allows the direct costs of hauling each passenger and ton of goods a mile to be rather high without lowering the dividends of the line. Advantage has been taken of these conditions throughout the industrial and trading districts of England and Scotland to set up a greater number of trains, and especially of fast trains, than are to be found in any other area of equal size in the world. Nowhere else are there so many pairs of points between which the passenger has a large choice of the time of day at which he will start on his journey, and yet travel at an average rate exceeding forty miles an hour. Nowhere else are small packages collected and delivered over

¹ Methods of obtaining economy in money costs, without losing economy of time, are considered below, pp. 490--1.

III, iv, 8. so many considerable distances within the twenty-four hours, even at the cost to the railway of sending off wagons with but light loads: nowhere else are so many express fish and milk trains run, though the quick and secure transport of perishable food over long distances has been brought to a high degree of perfection by American railroads.

The compactness of the industrial districts of England and Scotland, combined with the manifold railway access which each district has to various sea-ports, has made competition for traffic of this kind very eager. In the result there has been a constant tendency to agreements as to charges: and these agreements have been promoted by the intervention of Government; even while a chief motive of the Legislature was the desire to maintain competition among railways, and to check the movement of the railway system as a whole in the direction of firm monopoly. Parliament has always favoured the fusion of lines which make a continuous whole, and regarded parallel lines with some suspicion; but some parallel lines for which there was no good reason, when they were made, are now fully employed.

The intensity of some kinds of goods traffic, and of almost all kinds of passenger traffic between chief centres of population has contributed to the concentration of the greater part of Britain's railway system in less than half of her area: and it has been justly observed that the forethought of a strong Government might have effected a somewhat better distribution. But under modern conditions, densely peopled districts exert a preponderating influence on Governments, even of a somewhat absolute character: stress is laid on the fact that trainloads are often very light in districts in which the passenger train mileage in each hundred square miles is very small. It is noteworthy that, the railway map of Prussia, under by far the most efficient governmental management in the world, shows alternations of dense and sparse networks somewhat similar to those of England's map: and this is in spite of the fact that many Prussian railways in sparsely peopled districts were made almost exclusively for strategic purposes.

Again, when two considerable railway centres *A* and *B* are connected by parallel railways, some waste may be caused by

running express trains on both routes: and the cessation of such waste is one of the more prominent advantages which are sometimes anticipated from a fusion of the two lines, whether in private or Government ownership. But there seems to be no very great waste in such duplication; except in a few cases, in which the trains on both routes are inadequately filled, and run between *A* and *B* without stopping. It more frequently happens that some of these express trains stop at one or more important secondary stations on the way. Suppose *C* to be such a station on one of the lines; then it will probably be arranged that a slow train arrives shortly before a quick train stops there; so that passengers from small stations intermediate between *A* and *C* travel quickly between *C* and *B*. Similarly passengers, starting from small stations between *B* and *C*, travel quickly between *C* and *A*¹.

4. *In regard to short periods most of the costs of a railway are "fixed"; but large problems of railway policy relate chiefly to long periods, in regard to which much fewer costs are fixed.*

Passing from general considerations relating to the structure of British railways, we may now enter on the large and difficult problem of the relation between costs and charges in the railway industry, regarded as one of conditional monopoly.

¹ Parallel lines are sometimes deliberately arranged by a single company. Great Western expresses between London and Exeter have three routes: one through Bath, another through Badminton, and a third through Westbury. It is doubtful whether any waste is involved by the fourth parallel route of the South Western through Salisbury: and North Devon would have suffered much if that route had not been continued to Plymouth through Okehampton. There are no long parallel lines in Britain so near together as those that run on the right and left banks of the Rhine for more than a hundred miles, being in sight of one another for the greater part of the way: they are two of the busiest lines of the great Prussian system.

The Great Eastern and Great Northern lines are parallel between London and Cambridge. But Cambridge is the focus of many lines; and some Great Northern trains are arranged to arrive at or leave Cambridge at about the same time as Great Eastern expresses; so that Norfolk and other Eastern Counties may have good connections with Hertfordshire and neighbouring districts. As a rule the two sets of express trains supplement one another: and if their number were much diminished, the small gain in net income to the combined companies, would probably be of less value than the loss of time and convenience to those whose engagements give them occasion to move between London and Cambridge.

III, iv, 4. It is true that when once a new railway has a fully equipped double track, it can carry a great deal of traffic without further outlay on its permanent way, and with but little further outlay on buildings: though of course it must increase its rolling stock, and almost every class of its employees. It is true therefore that its costs are less dependent on the extent of its business than are those of a shipping company, which makes use of public docks: and invests nearly all its capital on vessels that speedily deteriorate, even if they are not rendered obsolescent by technical advances. A large ship is no doubt very economical of working, provided a full cargo can be found for it. But the total costs incurred by a railway for a small traffic per mile are generally very great, while those for a dense traffic per mile are generally low: and there is no equally striking contrast between the expenses per ton or passenger mile of a small line of well chosen ships, and those of the most powerful line. It will however be found on examination that tendencies to Increasing Return are strong only at certain stages of a railway expansion: and that similar tendencies are found at corresponding stages of the growth of a business in industries which are not, in any special sense, Increasing Return industries.

Consider for instance the case of a printer, who is equipped with a varied up-to-date plant and staff, but is slack of work: the gain of an additional order may be worth to him nearly the full price that he would get for it, after deducting the cost of the materials. And yet, if his normal output doubled, he might probably need almost to double his plant and staff: he would not reap any great additional economies from more highly specialized plant or staff, utilization of waste products, etc.: that is, he would not reap many additional economies of those kinds which are giving the upper hand to a giant firm in steel and some other distinctively Increasing Return industries. Therefore although a particular order may be taken, without allowing for more than out-of-pocket expenses; yet, speaking generally, orders are to be charged with their appropriate share of the cost of setting up, or it may be enlarging the printer's buildings, plant and staff: and the same is true in great measure of railway work. That is to say there are alternating stages in the evolution of the traffic on a railway. When it is first

opened, it commonly has an equipment expected to suffice for several years, without calling for any very heavy expenditure. It has at first very little traffic; perhaps hardly sufficient to cover working expenses, without making any contribution to interest on the capital invested. During that stage, every addition to the traffic adds much more to the revenue of the railway than to its costs: and it may be said, without greatly forcing the use of words, the railway is an Increasing Return business. But after a while the traffic begins to outgrow the equipment of the railway; and then no more can be carried efficiently without great outlay: while that development is in process the railway may be described, without greater forcing of the use of words than in the preceding case, as a Diminishing Return business: and so on¹.

It may be well to go into some detail in regard to this. Of course it is, generally speaking, no true economy to build a line with steep gradients or sharp curves, or even on a circuitous route, if there is any considerable chance of its being required in the course of a generation to do important work. But nearly all the other outlays, which belong to a first-class railway, may well be avoided when building in a sparsely peopled district.

A single line, with few and short sidings, scanty ballast and light rails can be built and equipped cheaply. It may be closed at night; and at a very small station two men can do the whole work, including the signalling. As the traffic increases, the efficiency of the railway can be increased gradually: and

¹ This point has been developed by several writers and especially by M. O. Lorenz in the *Harvard Journal of Economics*, Feb. 1907 and Feb. 1916. He quotes from President J. J. Hill of the Great Northern Railway, U.S.A., speaking in 1907: "The traffic increases wonderfully, but the railroad facilities have not been able to keep up the pace. That is why to-day your business in some respects is paralysed, while you cry aloud for transportation help. Long paralysis means slow death. The fact is probably forty per cent. of your business to-day is without any facilities to handle it."

The fundamental importance of the element of time in all discussions of the lines of division to be drawn between (1) fluctuating operating expenses, (2) constant operating expenses, and (3) fixed charges, is explained in great detail, with special reference to American conditions, in W. J. Ripley's excellent *Railroads*, vol. I., especially pp. 61—66. "Everything depends on the length of time under consideration." Compare his long period chart (p. 66) with those for short periods (p. 100).

III, iv, 5. thus its capital cost can be kept in fairly close relation to the work it has to do, and the income it can earn. But the increase in expense makes some great jumps: as for instance as soon as it has been decided to have two lines instead of one, or three or four instead of two; or to keep the signal-boxes open by night; or to make the permanent way, including the bridges, solid enough to carry heavy locomotives at a great speed. None of those changes can, as a rule, be made piecemeal: and after each of them, the efficiency of the line is so much increased, that it can carry more additional traffic, than it is likely to have for some time, without any appreciable addition to its expenses on account of the permanent way.

These general considerations are sufficient to show that the permanent way and its equipments are not even approximately, definite entities, made once for all, and "fixed" independently of the traffic. If further evidence were needed, it would be supplied by the fact that in the thirty years 1882—1912, the "paid up capital" of British railways increased from 768 million pounds to 1335 million pounds; though their aggregate length had increased only from 18,457 miles to 23,441.

In one sense indeed it is true generally that the density per mile of the traffic of a railway system increases with its length; and that therefore the larger it is the lower the rates at which it can profitably work. For if an extension *B* is added to a railway *A*, the traffic on the united lines exceeds the sum of the traffics that there would have been on *A* and *B* separately by the traffic between *A* and *B*. But this consideration is more than outweighed, in a country already well supplied with railways, by the fact that the natural courses of the chief traffic have been occupied by the earlier lines.

5. *The direct costs of particular passenger services.*

(The business of a railway consists of two main branches, goods traffic and passenger traffic. Goods traffic is the more interesting for our purpose; but it is also the more complex.) For much of its cost is due to terminal services, which are of a different order from those of mere transport: and while, as a rule, the fare paid by a passenger is of no concern to anyone but himself, much of the trouble connected with charges for

goods traffic arises from the fact that the charge paid by producers or traders for the transport of any class of goods is a matter of concern on the one hand to those who desire to use the goods, and on the other to those who offer competitive goods from the same, or from different, sources of supply. We will therefore begin with the direct costs of passenger traffic. III, IV, 5.

The unit of charge is as a rule (subject to exceptions for season tickets, organized excursions, etc.) a single or double journey for a single person: but the smallest unit of cost of service is that of a passenger wagon¹. There is no means of ascertaining beforehand how much dead weight will be carried for each passenger in any train (save in a few cases, such as those of trains which bring every week day the same crowds of workers to go on duty at, say, nine o'clock); and the accommodation provided is adjusted to the probable demand for it, a large margin being generally allowed for unforeseen contingencies. Therefore the direct cost of a passenger must generally be taken to be that fraction of the total cost of hauling a wagon, which corresponds to the average number of those who travel in the same class of carriages with himself, in trains which run under similar conditions to his. This last qualification leads to the next point.

As it makes scarcely any difference to the cost of a railway whether any carriage in a train, that is made up ready for running, is full or not: so the addition of an extra wagon to a train, which is bound to run, adds to the total costs of the train, nothing but the wear and tear of that wagon, and the consumption of a little extra coal. Therefore speaking generally the wagon unit of cost is to be regarded as a proportional part of the next larger unit of cost, that of a train.

It used to be held that a fast train cost more than one which made many stoppages on the same route. This was partly because an engine that could travel fast, was very expensive: but improved methods of exact mechanical engineering have reduced this difference; and it is now understood,

¹ It is true that when some of the wagons contain compartments of more than one class, it is possible to meet slightly increased demand on the part of any class of passengers by substituting a long wagon for a short one. But, for the sake of simplicity, these and similar trifling details will be left out of consideration.

III, iv, 5. that a train travelling forty or fifty miles an hour with but very few stoppages, is less costly than one that makes frequent stoppages, and is yet required to attain a good pace between each pair. Therefore the practice of charging additional fares for express trains has declined, especially in Britain; and the direct cost of a passenger train may be taken as varying generally with its total weight and length of journey. But a train which runs at a time, when the line has more traffic than it can conveniently accommodate, may be held not to pay its costs unless it is fairly full: as a rule, the trains that do run at such times can earn large revenue even at low charges; and these opposing influences have led to some curious anomalies¹.

The total charges that belong to the passenger service, including the transport of such parcels as go by passenger train, consist of the direct costs incurred on current account for passengers, parcels, rolling stock, stations and employees; together with interest on all outlays for those that are to be charged to capital account: also with appropriate shares of the general costs of signalling; and of the making and maintenance of the main way, and of such sidings as are not exclusively used by the goods traffic. But the distribution of these general costs between the passenger and the goods divisions cannot be brought under any fixed rule. As a starting point it may be supposed that they should be divided roughly in proportion to the direct costs of the two divisions: with some special allowance for costs that are incurred more for one service than another; and especially when one pushes the other aside. For instance passenger trains crowd goods trains off the line at certain hours of the day, while goods trains in return have almost exclusive possession in the centre of the night.

To pass to some points of detail:—it is often said that the tendency of the age is towards increased subtlety of differentiation between various classes of goods that travel on the same line of railway: but, in so far as this is true at all, the cause will generally be found to be some new differentiation in the services required for different things. In passenger traffic on

¹ Something is said about them in Appendix M, 2.

the other hand the tendencies of the age are clearly in the opposite direction. In early times indeed everyone had a definite rank: when he travelled he received accommodation according to his rank; and he paid for it proportionately, unless indeed he exacted it without payment. The first English railways went on this plan: those who were unable to pay high charges were forced to travel in great discomfort; and express trains were practically reserved for the gentry, partly because it was thought that quick transport was very costly; until, with the advance of railway technique, it was found better to attract all classes of passengers between principal stations into fast trains.

Thus one form of differential charge, which was long customary, has practically disappeared from British railways. Meanwhile the amenities of third class travelling have been greatly increased; and it has become necessary to provide first class passengers with so much free space, that the actual cost of the haulage needed for earning a given sum from first class carriages has become greater than for third class; though of course the net earnings on each hundred passengers are greater for the first than for the third class. In several other ways differential charges for passenger traffic have diminished; and an elastic demand has been met by increasing accommodation and specially low fares, even under conditions which made the direct cost of haulage more heavy than usual.

These considerations tend to show that the reasonableness of the fares charged by a railway cannot be judged even approximately by mere reference to the rates per mile in each class: for the services of one railway may be so much more advantageous to passengers than those of another, that they are really the cheaper, though at higher charges. (Speed and frequency of trains, spaciousness and ease of carriages, allowances of free luggage, etc. are benefits for which extra fares could be charged reasonably; in the same way that a higher rent may be reasonably charged for one ten-roomed house in which the rooms are large and well appointed, than for another which is also classed as a ten-roomed house but cost much less to build.) Again, a line built in a mountainous and difficult district, where traffic is scarce, may charge higher rates for

III, iv, 6. a service inferior in comfort or efficiency to that of another in a rich, flat, densely peopled district: and yet be in effect the cheaper of the two.

But so great are the advantages of simplicity and uniformity that, with a few divergences in exceptional cases, the charge of a penny per mile for ordinary third class traffic is universal on British railways; it being understood that, where there are competitive routes, the mileage is reckoned as by the shortest. Thus practical expediency has brought about a rigidity of rule, which would have been resented if imposed on the railways by authority.

6. *The direct costs of particular goods-traffic services.*

As a single passenger is the ordinary unit of charge on his side of railway business, so is a single consignment the unit of charge on its side: and, as in passenger service so in goods service, the direct cost of the appropriate unit of charge, is derived in the first instance from that of a wagon unit (or, in the case of a large consignment, of several such units), which again is generally derived from that of a train unit. And the general costs of service are shared out over particular direct costs on a similar principle, or lack of principle, in the two cases. But there are some broad contrasts between goods and passenger services, from the points of view both of the railways and their customers, on which a little should be said.

To begin with, there is the consideration that goods traffic bears a closer resemblance to manufactures than passenger traffic does: because the carriage of goods, like the work of a factory, is only one link in a chain of production; whereas a passenger journey is, as a rule, complete in itself. Consequently the immediate, though not the ultimate, interest in the freights charged for any kind of goods is generally concentrated in a relatively small number of people, who trade in those goods as buyers or sellers. But the interest, both immediate and ultimate, in passenger fares is diffused over the whole population; and therefore it seldom gives rise to keen sectional conflicts, such as are found in the relations between those engaged in successive stages of the same long process of production; especially if they are organized in cartels, or so-called

"trusts," and other giant businesses. Accordingly, freight rates are subject to an eager, alert and well informed scrutiny, which is seldom brought to bear on passenger fares: and, as it happens, though discrimination between passengers according to their rank has been rendered impracticable by the obsolescence of definite lines of social cleavage, the discrimination of goods according to their rank has become a very important matter to the carrier: and it is not very difficult.

Again, a passenger who desires to travel between two points *A* and *B* is concerned only with the charge levied on him: he does not care whether it is greater or less than the charges levied on other people who travel between either point and some third point. But the producers and dealers who live in *A* are often deeply interested in the relation which the railway charges, levied on the goods which they send to *B*, bear to those levied on rival goods, which come from *C*, or *D*. In fact, there is much truth in the saying of an experienced railway official, that when a trader or a locality complains that railway rates are too high; what is really meant, is that the rates charged to some competitive person or locality are too low. For, as has been already observed, neither producer nor trader is very much affected by a tax or any additional charge laid on him, provided that everybody else, who supplies the same market, is subject to the same burden: the main burden falls on the ultimate consumer, though the businesses of producer and trader may be a little curtailed.

Again, in a small country such as England, which has sufficient traffic to require its chief lines to be kept open at night, the goods service presents in one respect simpler problems than the passenger service. For the passenger insists on choosing his own times for travelling: and these are, for the greater part, times when the line is crowded (unless the journey is long enough to give time for a fair night's sleep). But the shipper of goods requires nothing more than that they should travel safely, and be delivered without great delay: he does not care whether they go in a fast or slow train, or what stoppages they make by the way. So far from objecting to their travelling by night, he rather prefers it; at all events in a compact industrial district, where goods collected by a railway towards

III, IV, 6. the end of a day's work can be generally delivered before noon on the next day. This convenience is partly cause and partly result of the British practice of making up numerous trains, of small wagons, many of which are not nearly full; so that one can be dropped at each considerable station to be unloaded at leisure. The proportion of dead weight to freight in these trains is very high: but they enable work to be done without very much night labour between two working days, which in most other countries is spread over at least twice as long a period. And thus in goods traffic, as in passenger traffic [*British railway services rate economy of time to the customer much more highly in comparison with money costs, than other railway services do.*] Let us pass to another contrast, that between railway and shipping services.

The special services with their corresponding costs, which steamship lines render to valuable goods, consist chiefly of more rapid transit, with a regular service of ships insuring prompt despatch. These advantages play a relatively small part in railway goods traffic: for distances are short, at all events in small countries, and there are frequent and regular services on main lines for all sorts of traffic. Steamers charge light goods according to volume. Railways do not: they simply put goods that occupy much space in proportion to their weight into a "higher," that is more highly taxed class: machines for instance are in a high class when fully set up, and in a low class when their several parts are closely packed in square cases.

English railways generally undertake cartage for everything, except minerals and other things, which come in great bulk and are carried at very low rates. Costs are incurred and corresponding charges are made for "terminal" expenses of various kinds, with extras for covering and uncovering, loading and unloading. These costs and charges are not always very heavy absolutely: but they are large relatively to actual costs of haulage, especially in short distance traffic: consequently unless terminal charges of all kinds are separately entered, the total charge per ton-mile must be very high for small distances, and gradually diminish, as the distances increase¹.

¹ The direct cost of carrying the same class of goods per ton-mile has been found, other things being equal, to vary generally as the square root of the

Accordingly railways in every country arrange that the charge for each consignment per ton-mile shall be greater for small consignments than for large, and for small distances than for large: administrative economy requires the rates of charge to be grouped into several broad classes. The charges for each sort of goods are in some measure adjusted, with general consent, to the average of the total consignments of them which make the same journey, and give scope for making up fairly full wagon-loads, if not train-loads; and again to the costliness of any special wagons needed, and the ratio of their weight to their carrying power; and again to the outlay and care needed for preventing depreciation of the goods and injury by the weather. Account may also be taken of the fact that wagons specialized for one sort of traffic are apt to be expensive, to travel often empty one way; and in some cases, to be idle during a great part of the year. III, iv, 6.

To conclude:—a fairly old railway, holding the greater part of the transport of a compact industrial district, is likely to have so completely adjusted its appliances to the traffic, that each of them is well occupied; and does its work so economically, that any addition to that work would have to carry nearly full costs. In such a case cost of service could automatically become the chief regulator of railway charges; and some American writers are inclined to think that, ere many generations are past, railways will in their own interest cease to concern themselves much about the various values of their services to particular classes of traffic; but will levy nearly the same charges for all services that make equal demands on their plant at equally busy seasons, and require equal direct or "particular" costs. Mr M. O. Lorenz argues cogently that while *value* of service is likely to continue long the chief regulator of prices in the sparsely peopled districts of the Southern and Western States of America, *cost* of service shows signs of taking the first place in the Eastern States¹.

It has already been said that Scientific Management is but one exceptionally vigorous and sanguine embodiment of

distance. (See Ripley, *l.c.* i. p. 103) But this empirical rule might easily be set aside by changes in organization and in technique.

¹ *Quarterly Journal of Economics*, Feb. 1916.

III, IV, 6. the fundamental idea that the progress of the science of business, as of all other sciences, depends largely on the clearness and precision with which the achievements of one generation are recorded so as to form starting points for those of the next. The trained instinct of a business man of high genius will no doubt often see at a glance a clear way through problems, on which even the most voluminous statistics could give but little guidance.

But, as was urged above (II, II, 2), the printed figure remains; and cumulative progressive knowledge based on organized records of observed facts supplies the material on which modern constructive faculty works. Its province is to perceive how the slight and indirect lights, thrown by mere numerical records, can be so utilized, in combination with lights drawn from their sources, as to cause realities to fall in their proper positions relatively to one another, and to set on one side hasty inferences from limited observations.

No doubt untutored critics are apt to be misled by international comparisons, which discuss ton-miles, wagon-miles, and train-miles, on the supposition that each of these terms means nearly the same thing always. But American railways have lived down such difficulties as these; and are turning to ever better account the publication of the information; which the Interstate Commerce Commission, with full support from public opinion, requires them to publish¹.

Some reference has already been made to various policies for the distribution of the general costs of a railway among the charges for its various services. But we have come to the point at which these complex and thorny matters must be considered more closely.

¹ Something more is said on this subject in Appendix M, 4. The present is not the proper place for investigating the relations between employers and employed in conditional monopolies. But the charges, made by British and Continental railways, cannot be compared fairly without reference to the high wages which British railways pay. An Act, passed in March, 1913, provided that a rise in their charges might be justified on the ground that it was needed to cover outlay on "improvement in the conditions of employment of its labour or clerical staff."

CHAPTER V

COMPETITION AND MONOPOLY IN TRANSPORT, CONTINUED

1. *The distribution of the general costs of a railway* III, v, 1.
over its various services.

The present chapter is mainly concerned with the application to railway problems of the general principles, already discussed, relating to the good and the evil of price-discriminations by semi-monopolistic businesses. This inquiry, especially in so far as it relates to geographical discriminations, runs up into the question of Government control of railways and of their relations to other agencies for internal transport; as to which something is said in Chapter VI.

In the present chapter, as indeed throughout, reference is made to normal conditions, such as those which existed before the world-war: they were the basis on which earlier drafts of the present Volume were written; and no account is taken of the abnormal conditions which have arisen during the war, save where an express reference is made to them.

When price is governed by active and unrestricted competitive production, the highest price that the market will bear is the equivalent of the cost of production; provided the commodity in question is in fact, or can conveniently be made, the chief product of a well-equipped business. But the case is different, where several products have a joint cost of production, in the strict sense; so that it is almost impossible to produce one without producing the others. For then the division of the costs between them is governed by the relative volumes and intensities of the market demands for them; subject to the condition, that if the processes of production can be so

III, v, 1. modified as to vary their relative proportions, then those proportions will be modified in accordance to the relative market demands; and prices will be modified accordingly. Thus, before mutton could be brought across the equator in cool chambers, the wool of Australian sheep was developed at the expense of the mutton; though, in breeding British sheep, the first consideration was the rapid maturity of a heavy carcass. In such adjustments monopolistic and competitive policies run on similar lines: what differences there are between the two are relatively unimportant.

We have seen that manufacturers, traders, and shipping companies, who offer a variety of commodities or services, are seldom able to set a large share of general costs on any commodity or service, on which well-appointed businesses can conveniently specialize: but in regard to all others they have great freedom. Their normal practice is to adopt some distribution of the general charges provisionally: to make slight tentative variations in the distribution—sometimes with reference to particular transient conditions, sometimes with the purpose of improving their permanent policy. A strong monopolist business has a free hand in making such experiments: but its action in this respect differs only in degree, not in kind, from that of almost every considerable alert manufacturer and trader.

Just as independent competitive manufacturers and traders distribute their general costs over various classes of goods, somewhat arbitrarily indeed, but yet ultimately very much on the same plan; so it has been found that "there exists surprising similarity in the methods employed by different railway companies in apportioning certain common or overhead expenses. This similarity appears to have been brought about without previous conference and agreement; and is apparently the result of similar conclusions arrived at by men working at the same problem independently of one another." It appears that this agreement, liable to vary as it is from one country to another, and to change in some degree from decade to decade, is yet sufficiently definite to serve as a basis for "public policy expressed in most general terms, leaving the detailed application to administrative action and judgment." Such appear in effect

to be the main principles governing the British Railway Commission and Board of Trade; as well as of the Interstate Commerce Commission, on whose behalf they have been thus formulated¹. III, v, 1.

From a purely abstract point of view, it might seem proper to assign to each service its own direct costs, together with a proportionate share of those which belong specially to services of a like kind with itself; and another proportionate share of those which are common to the whole railway. But for practical purposes, account must be taken of the universal custom of putting lower charges on goods that could not be carried at all at rates, which have but little constrictive effect on traffic in more costly goods. Accordingly a charge for any service is not regarded as discriminative, so long as it includes shares of general costs proportionate to the charges which are commonly levied for similar services in regard to *goods of the same kind* on the railway in question, and on others working under like conditions. Such conclusions are based on a broader foundation of experiment and experience than most of those which are adopted as rules in practical life. They are not final of course; and must in the long run be modified by the assault of experience which is growing slowly in breadth, and fast in organized analysis, record and reasoning; but they hold the field for the time.

A preliminary difficulty arises from the distinction between the cost of handling freight at its points of departure and arrival; and the cost of moving it when it is in its wagon. The first cost is approximately the same for similar consignments,

¹ By Mr B. H. Meyer at the meeting of the American Economic Association, in 1913. Professor M. B. Hammond suggests that it matters very little how a merchant or a manufacturer starts his distribution of general costs. He may apportion them "to labour costs, or to the cost of the material; or, even more loosely still, according to floor spaces, or according to the amount of sales or the number of employees." After a while he will get from any starting point to nearly the same conclusion; since "by carefully comparing the rates of growth of the various departments with the growth of his profits, he is able year by year to correct his former standards of measurement....In applying the comparative method of determining costs and of fixing charges in accordance thereto, it would seem that the Commissioners and the railway officials have been merely pursuing the methods generally known and accepted by most careful business men." (*Quarterly Journal of Economics*, Nov. 1910, p. 66.)

III, v, 1. whether destined for a short or a long journey: the second varies nearly with the length of the journey, but is rather less in proportion for a long journey than for a short. Here it is necessary to recall the contrasts between the charges for large and small consignments, and for long and short distances.

First, as to the terminal charge: it must cover direct costs, together with a share of general costs; all being roughly adjusted to the labour of handling done by the servants of the railway, with extras for such special tasks as that of protecting the consignment from the weather by a waterproof covering. These terminal charges are independent of the distance to be travelled; except in so far as a long journey may call for any precaution, that would be inappropriate for a short one: they are of course at somewhat higher rates for small consignments than for large.

Secondly, that part of the charge, which relates to moving, covers direct and indirect costs. The direct costs of moving are proportionately higher for short distances than for long. And they are much higher for small consignments than for large: because full truck loads can be sent through to their destination, without further handling; while small consignments must often travel in partly empty wagons, at the expense of much "dead weight"; or else call for much special handling and delay on the route.

With so great an economy to the railway in performing a large task relatively to that of performing a small one, it is inevitable that there should be some corresponding lowering of proportionate charges in favour of the large tasks: and, as large tasks are generally undertaken for large capitalists, there appears to be some discrimination against the small man. But in fact it seems certain that the shares of general costs, which are charged in addition to direct costs, often bear a lower proportion to those direct costs in the case of small tasks than of large.

Hence it might be inferred that the large trader, and not the small, has ground for complaint of discrimination unfavourable to him: but this contention, though plausible, seems to be invalidated by the fact that the charge for the large task gives a less excess over direct costs, and thus contributes less to the net revenue of the railway, than would the aggregate charges

for an equal aggregate of work divided up into small pieces. III v, 1. Whatever nominal discrimination there be in favour of the small consignment, is therefore not injurious to the railway; and it is generally approved. This illustrates the great difficulty of laying down definite rules for deciding whether there is any element of undue discrimination in charges made for services that are similar, but not identical.

There are some large classes of discrimination as to which judgment is even more difficult. Many of them, which can be defended by plausible arguments, will need a little study: but we may first note, and put aside, distinctly vicious discriminations, due to corrupt practices by some railway officials, or to violent action by powerful capitalists: they have done much to excite prejudice against differential charges which are really reasonable. For instance in the tumultuous development of American railways in the latter part of last century public anger was roused by the pressure, put by powerful customers on various railways, to grant them concessions out of all proportion to the economy to be derived from the large size and steady flow of their consignments. Some of these concessions were open, some secret: some were made honestly in the apparent interest of the railway; some were obtained by corrupt payments to particular railway officials, or by other malign courses. Such cases are however now rare and relatively unimportant: the sensational chapters in railway history, for which they provided material, are no longer of general interest¹.

¹ To take extreme cases of pressure put on a railway:—a giant business sometimes made a demand on a railway for exceptionally low rates, supported by a threat to make a branch line to connect its works with a rival trunk line, or even with the sea-board. And a group of financiers, or even a single powerful financier, having large interests in each of many concerns, would give a railway to understand that, if it did not yield a concession to one of those concerns (which perhaps had no access to rival lines), the railway would lose a good part of the traffic of other companies which had access to several lines. Concessions of this kind were seldom secret.

But others were secret and dishonest. Thus packages consisting mainly of goods, which according to the recognized classification ought to be charged at a high rate per ton, would be billed as consisting solely of low-rate goods; and the railway would not trouble itself to inquire too closely. Warehousing charges would be omitted, or trucks would be allowed to be used practically as warehouses by the agents of a favoured business: while the goods in which a rival business was interested would be habitually delayed; and at critical times even

- III, v, 2. 2. *Discriminating concessions to particular industries and trades in regard to charges and services are mostly local; and they are often much influenced by competition between industrial and trading districts, served by different railways.*

It has already been observed that the public at large seldom concern themselves about railway freight charges: and that (the alert attention of producers and traders is generally directed to the *relative* rather than the absolute, amounts of those charges; for, so long as each is sure that all his competitors, far and near, are subject to like charges, he is generally content.) In so far therefore as agreements among railways weaken the motives which prompt producers and traders to vigorous action in such matters, they deprive the non-vocal consumer, who bears the ultimate burden of any high rates, of a chief defence; and they thus throw an ever increasing responsibility on public authority to intervene in the general interest. For instance, if the whole of the flour consumed in the North of Scotland came from Glasgow mills, then high railway charges on flour, passing from Glasgow to the North of Scotland, would be of little importance either to the Glasgow millers or to the bakers in North Scotland: the public alone would suffer, and they would scarcely know to what extent they suffered, or how to seek a remedy. Similarly, if a combination among the Glasgow millers kept the price of flour somewhat high relatively to that of wheat (effective competition from other mills being absent), the local bakers would raise the price of bread either directly, or by a change in quality, and would pass unscathed. The public would suffer: but they are not vocal, unless strongly aroused; and probably they would not be.

Often however agriculturists, or some other class of producers or traders in any locality, see that lower rates would give them an advantage in any market, where they are brought into competition with producers or traders of another locality, who are not subject to the same set of railway rates: and then

covered up on side tracks by so heavy a block of other trucks as to be practically inaccessible. Free passes would be given, not merely to regular business "travellers"; but to others, who had no special claim, but whose interest it was desired to enlist.

sufficient driving force is supplied to attract attention. If the locality affected is large, and the special interests concerned are strong, the issue becomes one of national importance. A notable instance of this was the complaint made by British agriculturists generally, that the railways carried imported produce from Southampton and other ports, at much lower rates than they themselves were charged when sending their produce to London and other markets¹. III, v, 2.

On the whole, controversies in regard to Preferential rates are declining in interest. There is much truth in the statement frequently made that a railway is often prevented from lowering a charge, which would benefit a certain local industry or trade without material loss to the railway; because it fears that such action would invite complaints from some other district, in which a similar concession could not be made without much loss. Since preference in the character of the services rendered

¹ These complaints were investigated by a strong Committee of the Board of Agriculture, whose Report [Cd. 2959], 1906, is a chief source of information on the subject of Preferential Rates, so far as this country is concerned. It brought out clearly the tendency of long distance traffic, especially in connection with international trade, to be sent in large quantities direct from a port, or other landing point, to a single market; and in packages so arranged as to travel easily and occupy the least possible space, so that the cost per ton-mile is very much less than that of ordinary local traffic. A little education in railway technique would remove many of the wastes and other troubles involved in such traffic; especially by inducing cooperation among producers in the same locality, so that each one's small consignment might earn the benefit of the low rate for a large consignment: whereas in fact (*Report*, p. 32) a grower will often split up his consignment and "send it to different salesmen, in order to find out who gives the best prices." The Report tends to confirm the impression, previously prevalent, that in such complex matters as complaints of harsh treatment or undue preference by a railway, an expert handling of the case is necessary even before a sympathetic tribunal. A shrewd, but untrained, exponent is apt to state his case badly; and, by losing it, to injure others who have grounds of complaint similar to his. The Board of Trade exerts itself to lessen this evil by informal conciliation; by clearing away misunderstandings; and by putting such pressure, as lies within its power, on a railway that seems to be acting harshly. But where recourse to the Railway Commission is necessary, the costs are said to range between £21 and £2000 (*ib.* p. 28). The *Report of the Board of Trade Railway Conference*, 1909 [Cd. 4677], p. 4, however suggested a scheme under which the Registrar of the Commission might have provisional authority for dealing with small cases by less expensive methods. Statements of the cases for and against the railways respectively will be found in Pratt's *Railways and their rates* and Waghorn's *Traders and Railways*. A short balanced statement is given by Williams, *The economics of railway transport*.

III, v, 3. cannot easily be made the ground of complaint, this consideration increases yet further the tendency to compete by improvements of service rather than by lowering of charges. Such escape from restraint on competition works for good in many ways; though its benefits are less frequently considered than the increased charges, which it entails. It is one of many causes, which makes the fares and rates for freight on British railways appear higher relatively to those prevalent in most other countries, than they really are.

For instance, even when railways have no direct contact with one another, or they have deadened competition by agreements made for their own convenience, the rivalry in industry or trade of the regions which they serve sometimes introduces rough but invigorating breezes of new contests. Thus Grimsby's connection with the manufacturing districts lies with the Great Central, while that of Hull is mainly controlled by the North Eastern: and, so long as Grimsby was little more than a fishing port, either railway was in a rather easy monopolistic position. But when the great new dock at Immingham, close to Grimsby, was opened, the two railways roused themselves to new activities¹.

More generally, if two districts, *A* and *B*, are in keen competition with one another for supplying a common market with their special goods; and *A* has grounds for thinking that *B*'s railway connections with it are better served than its own, a movement throughout *A* is speedily organized with the purpose of bringing its railway up to the level of that of *B*. The movement is likely to be successful: for in such a case the interests of the railway and the district are closely united.

3. *The good and evil of the concession of specially favourable railway rates to particular districts, whose geographical positions are somewhat unfavourable.*

In so far as the rival interests of producers or traders in different localities keep the railways, which respectively serve them, alert and progressive, the result is almost wholly good. But complex questions of public interest are raised, when local pressure causes a railway to carry the traffic of a district, which is in eager competition with others, at rates that do not bear

¹ See W. A. Robertson, *Combination among railway companies*, pp. 92—3.

their full share of its general costs: for it is likely in consequence to reduce its facilities or raise its charges for other traffic, in regard to which it has a freer hand. This is, as has already been observed, a consequence of the fact that the railway has not an absolute monopoly, but one conditioned by the pressure of public opinion and public authority. For if its monopoly had been absolute in the districts, which were more specially under its control, it might already have set its charges there at those levels which would yield the maximum net revenues: and in that case it could not improve its position by raising those charges. III, v, 3

(Railways, like every other great economic agency, and sometimes more than any other, take a part in fashioning the geographical distribution of population in general, and of industrial centres in particular.) Facilities offered by them help some industries to be carried on in country districts; perhaps by independent workers in their own homes; perhaps by giant businesses, equipped with the best appliances, and with special departments for meeting such of their needs as in earlier times would have been met by subsidiary industries. Again industries which, even under modern conditions, gain much from the neighbourhood of allied industries, are enabled by the railways, for good and for evil, to concentrate themselves in large cities, and to send their goods to be consumed at distances averaging several hundred miles, in some countries, from the point of production.

In so far as this localization is effected by an even-handed increase of facilities, and lowering of charges for transport, there is strong *primâ facie* reason for believing that it conduces to the public good: for ease of movement, even when no part of a deliberate and far-seeing public policy, is likely to be beneficial, because it develops new opportunities. But the case assumes a different aspect, when account is taken of the interest which every railway, however just its methods and purposes, has in increasing its share of the total services which enter into the production of commodities in general.

For instance, "railways are giving exceptionally low export rates from the manufacturing districts in the North to London, in order to get the traffic on to their lines from London to the

III, v, 3. North, London being thus favoured in competition with other ports nearer to the manufacturing centres¹." There is much to be said for such an arrangement: but there are reasons for doubting whether the principle which underlies it, is one which can be applied extensively without ultimate injury to the public.

It is obviously to the general interest that sources of supply should grow up as near as possible to centres of consumption; subject to the condition that, where one source has a natural advantage in climate, mineral resources, or deep-set human aptitudes for a particular industry; it may be advantageously developed even at the cost of somewhat large expenditure of labour and material on marketing its products. And it may further be conceded, that when an industry has grown up in a district, under the influence of advantages which have been deprived of their force by changes in technique or other causes; a beneficial railway policy may, temporarily at least, grant to it relatively low transport charges in order to mitigate its misfortune. But in practice it is difficult to afford this relief to a particular group of producers or traders without encouraging the expansion of industry and trade in unsuitable places.

Care is needed, in the national interest, to preserve the full energy of the *Vis medicatrix Naturae*, which promotes migrations from districts in which the output of effort and its reward are on the decline, to those in which effort can be of more service. When, for instance, the chief cause of the weakness of any district is its failure to keep pace with more alert, energetic and capable efforts elsewhere; then only harm arises from any check to the stimulus which it might derive from the pressure of competition. In America it has been found that the desire not to charge more than what a weak district will bear, while charging to a strong district nearly all that it will bear, has led to extreme policies of "keeping everyone in business." This plan, though often conducive to high aggregate railway revenues, may be contrary to the public interest: "the final result has oftentimes been that the carriers have entered into arrangements, whereby they agree to equalize the advantages of com-

¹ W. A. Robertson, *l.c.* p. 93.

peting towns, by fixing rates in inverse ratio to the natural advantages of these towns¹." III, v, 3.

The Interstate Commerce Commission has consistently maintained that its mandate requires it to act on the principle, that "each locality is entitled to the benefit of all its natural advantages." It has been loath to admit such claims as that of Boston for rates to and from the West, approximately equal to those of other ports which have shorter connections with the West. (Boston herself owned so large a share of the railways which wanted to charge but a small part of their general expenses on the traffic with the West, that her wish might have been granted without throwing much of that burden on other shoulders.)

The task thus undertaken is of the greatest difficulty. The interests of the railways concerned are always ably advocated; and those of particular localities and particular groups of producers or traders commonly are. But those of the general public will not be adequately urged, unless it be by a strong specialized representative of the Government. The British Board of Trade is moving a little in this direction. France has formulated her policy with wonted clearness: the Minister of Public Works, acting with the advice of his Consultative Committee, rejects any rate, which appears to make undue discrimination, or to draw traffic away from any other railway, or to ruin the business of coasting steamers or canal boats; and strives so to adjust the tariffs of competing districts, as to secure to each "the natural advantages of its location." His work is in some degree simplified by the fact that nearly the whole of France is divided out into several large triangles, having a common apex in Paris: each of them being in unchallenged occupation of a single railway. But the State has the ultimate reversion of their property; and meanwhile it exercises a very effective control over their relations with the public; and indeed France is compelled to keep a tight hand on her railways in time of peace, in order to be prepared for war.

¹ Prof. Hammond, in the *Quarterly Journal of Economics*, Feb. 1911, where a full study of these matters will be found. His series of articles on "Railway Rate Theories" is the authority for several statements that follow as to the action of the Commission.

III, v, 3. Prussia has worked on similar lines, in ever closer touch with German railways other than her own. Her Minister of Public Works, with his General Advisory Council, has indeed for his chief aims the advance of national interests in production and trade; and especially the support of Prussian sea-ports and railways against foreign rivalry. But the claims of each locality for favourable treatment occupy much of the time of the General Council and of nine Local Councils; and they are largely responsible for the great number and complexity of the special (*Ausnahme*) railway rates of Prussia¹. The practical issues connected with these problems are on a much larger scale in America than in any other country: the abuses connected with them have been particularly bold; and the investigations evoked by them have attracted an unsurpassed amount of thorough scientific investigation on the part of professional students and public officials. America has followed the common practice of making exceptional railway rates to meet the competition of water routes: and the great distances which much of her goods traffic must pass, for the purposes of domestic as well as foreign trade, combined with other circumstances, have caused this practice to give a certain twist to much of her railway policy. For instance the charges to places which had water communications were often lowered below those to intermediate places. This provoked complaint and was forbidden: but the results were complex, and not altogether satisfactory. Something is said of them in Appendix M, 3.

It is indeed a grave question whether the practice has not been carried too far. The rules of the Interstate Commerce Commission have formally allowed railway rates to be reduced so far as to *meet* water competition, though not so far as to *extinguish* it: but they do not seem to arrange that, if a railway oversteps this limit, it shall be punished, by being prohibited from raising the rate above the level which it had chosen for its destructive strategy.

The majority of the British Commission on Inland Waterways (1906—9) expressed a hope that it might be found possible to enact that a railway, which lowered its rates in competition with carriers on an inland waterway, should not raise them

¹ See above, p. 448.

again until it had shown a good case for its action. But, with less caution, the Act of 1894 had put difficulties in the way of a railway's restoring an old charge, even if reasonable, when once it had adopted a lower charge. The intention of the Act may have been to restrain any lowering of rates for the purposes of a campaign. But in effect it hindered also reductions which were part of a constructive policy in the public interest, and often necessarily tentative: so it did mischief: it was in abeyance during the Civil War and it seems likely to be repealed. III, v, 4.

This is an instance of the inability of mere legislation to cope with such practical issues, as those concerned with traffic: it can act efficiently only through an administrative body, which can go into the details of each particular case; and even pronounce judgments as to motives. Much railway legislation has worked badly because it resembled the old rule that anyone who killed another should be put to death himself: in modern times he is acquitted, if he can convince a jury (or other authority) that his motives were only those of legitimate self-defence. Railway competition with water routes should in like manner be subject to the ordinary rules against monopolistic underselling: any lowering of railway charges should be stayed by administrative authority, when the evidence indicates that its aim was to destroy competition. The question whether it is consistent with the public interest that a railway should be at liberty to "dump" its services at less than *full* cost price, in order to drive a carrier by water, or any other troublesome competitor, out of business, resembles in many respects such questions, as whether the Standard Oil Company shall be at liberty to sell its oil in certain districts at a very low price, in order to extinguish local competition, and clear the local markets for its own products at monopoly prices—a class of problems which we are soon to consider.

4. *Improved railway administration has narrowed the field in which the authoritative regulation of particular rates is required. Estimates of the costs of particular services are relegated to secondary, but useful work.*

We may now resume the substance of the preceding arguments and bring them to a focus. We have seen something

III, v, 4. of the justification of the general opinion, which has been endorsed by the Interstate Commerce Commission, that railway companies everywhere apportion their general costs in nearly the same way: Indeed this opinion is in harmony with the results of experience in even wider fields; and a somewhat similar distribution of general costs prevails in many industries and trades, which handle several various products, even though there is no monopolistic control of any of them. The broad influences of public opinion, and the ever widening experience, and sense of responsibility of the leaders of the railway industry have done much to bring about this result by authoritative regulation in Britain and other countries; each country proceeding on her own lines, but all moving in similar directions. Regulation has become careful in general scheme and in detail, and the force of public opinion behind it has increased: therefore its action has become ever more important and stronger; and at the same time more subtle and more delicately shaded. Precedent has grown into precedent: decisions have proceeded with ever greater ease, certainty and precision. But yet there is more new work on the anvil now than at almost any previous time: the call for vigorous, but moderate and well considered, action by the regulative authorities increases with their strength¹.

In particular, there is almost universal agreement that railway charges cannot be adjusted to particular costs; and that they should not be so adjusted, even if they could. But questions relating to absolute and relative costs continually arise, very often on the initiative of the railways themselves: and organized knowledge, based on systematic studies, is rendering it ever more possible to make fairly confident, though carefully limited, statements in regard to them. The Interstate Commerce Commission often sets up independent investigations, when

¹ This is excellently shown in regard to America by Prof. McPherson who has set out (*Railroad freight rates*, pp. 399—404) in parallel columns "the complaints of 1888" and "the condition at present" in regard to each part of the field. In almost every case the greater part of what was formerly under dispute is now common ground to all: and attention is given chiefly to points which, though important in their way, could not attain prominence earlier. It is to be hoped that a similar table in parallel columns will be made out in regard to British railways.

railway representatives defend rates, that have been impugned, III, v, 4. by arguments based on cost of service. Such cases are apt to occur, (1) where any special service is performed and obligation incurred by a carrier: (2) where a rate complained of is judged as to its reasonableness by comparing the *ascertainable* costs of transportation of other commodities, whose rates are believed to be reasonable: (3) where comparison is made with costs on other roads or on other parts of the system; and (4) where comparison is made between rates for car-load lots, and for smaller lots. In particular the Commission insists generally that in the fixing of relative rates on articles strictly competitive, such a relative rate should be fixed for each as corresponds to the difference in cost of service, if that can be ascertained.

On the whole, the public interest in railway discriminations has somewhat diminished. Those which can be condemned as secret and corrupt, are rare. Those which are based on broad considerations of policy, and especially regional discriminations, are changing their form: the part played in them by individual interests is becoming small. And, though local interests have much to say about them, the substantive questions at issue seldom have much to do with railway technique.

To conclude:—the task of regulating such discriminations as remain, would be much lighter, if it were not that the motives of two discriminations similar in outward form may be very different: one benign, the other malign. To distinguish between them requires the same judicial and penetrative faculties that are required by judge and jury in combination, in order to decide whether the motive of a certain action was malignant or fraudulent. But it also requires an intimate knowledge of the methods and motives of railway and general business policy. (Some discriminations are paternal sacrifices for the benefit of weak industries, from which the railways hope to reap their reward in due time. Some are strategical movements for the capture of traffic, which otherwise would not come to them; and these occasionally have in the background an evil purpose of destroying competitive routes, in order to strengthen a monopoly.) And these evil motives for discrimination are not only subtly disguised; they are apt to be interwoven with others that

III, v, 4. command respect. Human nature is composite; and the faculties required for conspicuous success in the President of a great American railway, or the head of any other large business, are scarcely ever to be found in a man who does not take a noble delight in seeing things prosper under his hands: even if he be somewhat unscrupulous in his modes of warfare, he is glad when his manoeuvres have a side effect in "making two blades of grass grow where one grew before." A discrimination which he sets up, in order to give much needed aid to a struggling district, may come to be developed for the sake of the harm it will do to an obnoxious rival: but the original motive continues to work. When defending his action, he lays stress on that motive: and the half truth, skilfully handled, impedes the search for the other half. Therefore, although the task of specific regulation becomes lighter in many ways; there is no diminution of the need for such automatic control of railway charges as may result from the development of traffic by road, motor and inland waterway in Britain and some other countries: a matter to be considered in the next chapter.

In America increasing attention is appropriately being paid to the broad question whether railway rates as a whole are higher than is necessary in order to yield a reasonable net return on the capital *bonâ fide* invested in railways. A little is said on this subject in Appendix M, 4, 5.

CHAPTER VI

COMPETITION AND MONOPOLY IN TRANSPORT, CONTINUED

1. *Changing attitudes of the British people and Government towards the amalgamation of railways; the line of division between continuous and competitive railways being meanwhile almost blurred out.* III, vi, 1.

The high profits and the even more exalted expectations of English railways about 1844, when they had mastered their chief difficulties, and had still much virgin soil on which to expand, caused a Parliamentary Committee to advocate their purchase on terms which now seem extravagant¹. But exactly at that time the public was becoming convinced that, even if the principle of "protecting" home industries by taxes on imports were accepted, the almost incredible folly of the details of the old Protective tariff indicated that the forte of the British Government did not lie in business. Also, as regards railways, people had been offended by the contradictory decisions of Parliamentary Committees; and by the inability or unwillingness of Parliament to check the heavy expenditure of money, not always through clean channels, which was required to secure the acceptance of a Railway Bill, even when its proposals were clearly in the public interest. Public opinion increasingly favoured the view that the function of a constitutional government was to legislate, and perhaps appoint administrative authorities; and that it should not readily engage directly in business undertakings which were within the scope of private enterprise.

¹ A little is said about this project in Appendix M, 1.

III. VI. 1. For a time there was hesitation: but gradually it became generally recognized that Government cannot exercise effective control in such a case by merely passing laws to be enforced by strict verbal interpretation in a Court of Law. After many experiments it has set up a permanent Railway and Canal Commission; of which the President is an eminent lawyer, whose decision on points of law has been generally accepted: but his colleagues have been men of affairs, with trained instincts for handling large practical issues. The Commission has seldom been called on to act, unless one or more of the parties concerned in any doubtful matter has been unwilling to accept a decision reached by the Board of Trade, in regard to it. The Board, in effect, has decided what provisions shall be made by the railways for insuring public safety. But in other matters it acts as conciliator between conflicting interests: it avoids indicating its own conclusion, unless and until its efforts at conciliation have failed; but that conclusion when given is generally accepted, even though it has not by itself the force of law.

Whether the settlement of a disputed point is attained by the Board without friction, or by the aid of compulsory authority in the background, the scope of the settlement extends in effect to other railways besides those immediately concerned; and thus has much of the force of a general regulation. Every such general regulation tends to diminish the number of conflicting interests among railways: it often both invites and facilitates agreed action among them. They have thus found themselves increasingly making common cause in defence of common interests against common troubles; and the way has been prepared for the mitigation of competition, and the strengthening of tendencies towards combined action. In short the only provision that exists in Britain for dealing with public interests in large railway issues is somewhat fortuitous in initiative, and amateurish in study, as compared with that called forth by the needs of America.

The Parliamentary Committee of 1853 seems to have been the first to lay special stress on the danger to be anticipated from the monopolistic tendencies of agreements among railway companies, as distinguished from the simple monopoly of each railway along its special route. Stephenson's celebrated, but

vague, dictum that, "where combination is possible, competition is impossible" was gradually being developed towards its modern more exact form. Thus developed, it indicates that the tendency towards combination is so strong as to be almost irresistible, when (1) each of the chief businesses concerned is so large as to be beyond the strength of ordinary capitalists; (2) the interest of each tends towards the adoption of about the same policy, in regard to the public; and (3) the interest which each has in conducting an aggressive campaign against others is relatively small. Competition is often weak when these conditions are not completely filled; and when they are, it is suspended. It is indeed full of resource; and, beaten on one front, opens a new campaign on another: but combination is also alert; and, if favoured by circumstances, endeavours to reassert its dominion on that front also: action and reaction continue without cease. III, vi, 1.

For instance Parliament had encouraged the fusion of consecutive lines, and discouraged the fusion of competitive parallel lines: but time blurred the distinction between the two classes. The broad contrast between them may be put thus: The consolidation of two or more railways that feed one another, and find a market for one another's services, corresponds to the consolidation of blast furnaces with mines on the one hand, and rolling mills on the other. The consolidation of parallel lines corresponds rather more nearly to that of neighbouring rolling mills, or neighbouring blast furnaces. But blast furnaces which do not own mines, run a risk of being cut short of supplies when most needed; and in the alternating periods of depression they may wish they could use up their products in their own manufacturing works: while neither of two railways, that can feed one another, is likely to be backward in doing so; unless indeed it falls into the hands of a rival that parallels the other¹.

The sharpness of the contrast between consecutive and parallel railways has however been blurred by the expansion of great railways, which has brought each into competition with its neighbours for some traffic that used to be under single

¹ A striking instance of this was the contest between the Great Western Railway and the South Western for control of the Cornish lines from Plymouth. The Board of Trade compelled the victorious Great Western Railway to allow all reasonable facilities to the South Western: but the upper hand is still that of the victor.

III, vi, 1 dominion; and has enabled it to pass traffic to, and receive traffic from, railways, or at least particular branches of them, with which it had not been in contact previously. The London and North Western Railway is still known on the Stock Exchange by its old name of the Birmingham Railway; and it formerly had no competition with, and no inducement to combine with, others that ran to Bristol, Doncaster, etc. But it is now in competition with the Great Western for much traffic with Wales, while, in competition with the Great Northern, and to a less extent with other railways, it is indirectly concerned with through traffic between England and Scotland. These fusions of consecutive lines, often directly fostered by Parliament, have greatly diminished the total area in Great Britain, which is dependent on a single railway for most of its communications: and competition has obtained ever widening opportunities for its tendency to stimulate the energy and alertness of railway authorities in consulting the interests of the public. Fusions of consecutive non-competing lines into larger groups of competing lines have indeed been followed by understandings and pooling among those groups: and these greatly reduce the pecuniary gain that any one of them can reap by attracting traffic away from its rival. But the staff of a railway has often a lively interest in so increasing its prestige that the public speak well of it, and give it a preference over rivals which offer somewhat similar accommodation at the same cost and thus enterprise is sustained. Some of this energizing force would be lost if fusions extended so far that a comparatively small part of the population had the opportunity of comparing the methods of different companies. Of course it would be absolutely lost, if all the railways were owned by the Government: a vital matter which is sometimes overlooked. Such considerations as these might be set aside, if the additional technical economies, to be obtained by further fusions, were very great: but they are certainly less than appears at first sight; and the chief of them can be obtained by less extreme measures¹.

¹ Compare II, viii, 6. P.S. Jan. 1921. The Ministry of Transport recently issued a scheme "For the organization of transport undertakings, etc." [Cmd. 787] under which railways would be associated in six groups: and on 8 Dec. 1920 the Railway Companies Association published a letter to the Minister of Transport, approving the general lines of the scheme, but suggesting a few changes in detail.

2. *Many economies, which are commonly regarded as appertaining only to railway fusions, can be obtained by particular agreements for cooperation; or for pooling certain classes of traffic, or of wagons.* III, VI, 2.

Of course amalgamation reduces the work to be done by railway Clearing Houses: but, so far as the central administration is concerned, it seldom reduces expenditure much. For indeed the large problems of a far-spreading railway are sufficient to occupy the energies of an able staff; and some loss of efficiency may result from concentrating the care of an ever increasing number of problems on a single office. Again the multiplication of services on competitive routes is wasteful only when there is not sufficient work to be done by the parallel trains: but, as we have seen, such trains are run chiefly at hours at which the traffic on each line is heavy; and many of them would be needed if the two lines were under a single control¹.

Moreover many of the economies, which were supposed inherent in amalgamation, such as combined action for carting freights, and for establishing numerous receiving offices in populous districts, are now obtained in great measure by mere agreements among railways for cooperative work: these often enable equal conveniences to the public to be attained with less cost than before, or greater conveniences with equal cost. Such are the granting of running powers over a part of its line by one railway to another, which has special need of it; or, in some cases, the leasing of a line to another, with whose general traffic it fits in better than with that of the owner: and again the making and working of secondary extensions on the joint account of two or more great railways. Most of these agreements require no sanction: and the tendency towards them is

¹ It is true that a further lengthening of long distance trains would effect some direct economies; and that most of the platforms at which they would stop are already long. In America the passenger generally leaves his luggage to be sent after him by an express service, and the distances are great: and therefore very long trains are highly economical. But in England, where distances are short, and the passenger must wait till he secures his own luggage, the case is rather different: for vexatious delays, the economic importance of which is ignored by many writers on railway matters, must be caused by a great further lengthening of trains, unless so vast a staff of porters is kept on hand that their time cannot be well occupied.

III, vi, 2. indirectly facilitated by the action of the Board of Trade; which is continually urging uniformity as to the equipment of railways, to provisions for safety, to the classification of goods, and other matters¹.

Thus mere cooperation can attain, with little less economy, many of the ends for which fusion is sometimes sought; and without lessening the scope for initiative by independent lines. And if, as often happens, the community of work between two great railways extends only to a particular part of either line, the chief economies of a fusion can be attained by "pooling" the traffic on those two parts. The general plan of such a pool is that the earnings of the traffic in each year are to be thrown into a common fund; each railway being however allowed, in effect, to deduct the direct expenses to which it has been put in "moving" its part of the traffic concerned: the pool is then divided out, without any reference to the share of that traffic which any particular railway has carried, and simply in the fixed proportions agreed on at the formation of the pool. Those proportions are of course based in the main on the shares which the several railways had in carrying that traffic in the years preceding the formation of the pool: and, if the pool is certain to endure, no member of it has a special interest in running more trains, or providing any other accommodation, beyond that which is thought advisable by the others. If it is not permanent, each member may—as members of cartels habitually do—endeavour to enlarge its own connection; in order that, when the renewal of the pool is under discussion, it may be in a position to claim a greater share of the traffic². But the

¹ Agreements to allow return tickets, sold by one of two associated lines, to be used on the other, do not necessarily come under this head: for the return halves can be collected and exchanged, with payment for any excess either way. But the extension of a similar privilege to season tickets, as to which no such reckoning can be made, is an advance towards constructive cooperation by businesses, whose finances are not connected by any direct bond.

² Already in 1850 much traffic between England and Scotland was pooled: and many minor agreements of a similar nature were made. Difficulties in regard to obtaining through traffic over other lines without a special agreement, had played some part in this tendency: but they were removed by the Act of 1854, which resulted from the Report of the great Committee of 1853, and enacted that the several companies should give reasonable facilities for traffic on their lines, and accept and forward through traffic from and to other com-

scope of such endeavours seldom reaches far, at all events in III, vi, 2. Britain.

The chief wastes, at present resulting from divided ownership of the means of transport by rail in Britain, seem to be connected with the travelling of empty and half-filled goods wagons, and with the shunting of wagons. No organization can do much to reduce the number of empty wagons on their return to coal-fields; though improved organization of the coal trade, such as has been enforced during the war, may reduce the average length of the journeys of coal wagons, whether full or empty. The war has also brought into prominence the economies that may be effected by a great extension of the common practice of pooling, or "common use" of, the wagons used in certain classes of traffic: and it is to be hoped that the practice will be largely extended in times of peace by arrangement, fortified perhaps by special legislation¹.

The wastes involved in the shunting of wagons are necessarily great, relatively to the amount of transport, in a small, densely peopled country such as Britain: a goods engine often travels further in shunting operations than in actual transport. Some of this waste could be saved by a general pooling of wagons: but the only thorough remedy appears to be the setting up of shunting stations with overhead gear, by which a wagon can be panies' lines, and grant no undue preference. See W. A. Robertson, *Combination among railway companies*, p. 12.

¹ The *Times Trade Supplement*, July, 1916, reported that three groups of companies had made such arrangements. The first consisted of the Great Western, Lancashire and Yorkshire, North Western, Midland, and North Eastern: the second of the Great Central, Great Eastern, and Great Northern: and the third of the Caledonian, Glasgow and South Western, and North British. Over 200,000 wagons were thus pooled by the first group: they were almost exclusively of simple construction, adapted for general use: provision was made without difficulty for readjusting the balance, if any one railway happened to get either much more or much less than its proper share. The plan of setting up a separate company to own all the wagons, and charge each railway according to the total use it made of them, has many attractions. Its possible advantages are illustrated by the conveniences, which all concerned have derived from the provision by the Armour Car Liner Company of well equipped refrigerator-cars for perishable food, and of stock-cars for carrying cattle and tending them on the way. It is true that serious charges have been brought against that company of excessive use of its monopolistic power. (See Ripley, *l.c.* vol. I. p. 194, and a defence of the company in *The packers and the people* by J. Ogden Armour.) But the company now suggested might be owned, for the greater part, by the railways themselves.

III, vi, 2. lifted from one pair of rails and set down on another parallel line; as seems to be done to a considerable extent in Prussia. It is there combined with the use of detachable "bodies," which can be lifted by cranes and transferred from one "chassis" to another: this is commonly done in regard to passengers' luggage when booked through from London to Paris *viâ* Calais¹.

Much economy has been effected by united action in regard to the collection and delivery of goods by several railways, having stations in the same town. Some competent authorities have advocated the general adoption in Britain of a plan, that is in favour elsewhere, which hands over the collection and distribution of all minor goods traffic to independent carriers. Such carriers cart for all railways; they obtain as a rule from each railway the relatively low rates that are charged for wagon-loads. They are thus able to meet a great part of their own expenses out of the difference between those rates and the rates that, without their intervention, their customers would pay for small parcels; and there is much saving of railway work.

There appears to be solid foundation for the suggestion that a railway, contending with others for the favour of the public generally and traders in particular, hurries forward all goods committed to its charge, even though a couple of days' delay might seldom cause considerable inconvenience. This waste could, no doubt, be stopped by State railways, which would naturally tend towards the easy Continental practice of making all small consignments wait till they can be carried conveniently. But that remedy would be less in the public interest than such a combination of the British and Continental methods, as would provide that anyone who had special reasons for prompt service, should mark his consignment accordingly; the railways being free to hold up all other small consignments for (say) a couple of days, in order to make up fairly full wagon-loads. This could be arranged by agreement among the railways themselves; if,

¹ This separation of the body from the chassis plays a prominent part in the suggestive, if too heroic, scheme of Mr Gattie for concentrating as much as possible of the goods traffic of each great railway centre in a single huge station. There would be several floors above ground, chiefly occupied in sorting; and several floors below ground for the accommodation of trains. Through lifts and overhead rails would enable each package to be delivered direct into a wagon on road or rail that would go straight to its destination.

as seems probable, such a course should, after investigation, III, vi, 2. appear advisable.

Abuses of monopolistic power on the part of railways demand now but little attention from the Railways and Canal Commission: and its constitution might perhaps advantageously be altered, so as to fit it better for the work of constructive statesmanship: its semi-legal functions are still important, but the new age calls for work of a wider scope. It might devote special attention to opportunities for such constructive cooperation among railways as would increase the economy or efficiency of railway work; while taking care that a fair share of the gains, thus arising, accrue to the public.

British traditions call on Government to concentrate its chief energies on guarding the public against oppressive action or inaction, on the part of private individuals or corporations. If it undertakes business enterprises, which could be effectively carried out by private agencies, it ceases to be in a position to judge the conduct of such enterprises: while the great amount of its energy which is given to such enterprises tends somewhat to diminish the efficiency with which it discharges its supreme function as guardian of public interest in general. But yet there are some special reasons for direct intervention by the State in the transport industry, based partly on extensions which modern developments of technique have made of familiar reasons for the ownership of roads by the State: these will be considered in the following Sections.

But first it may be observed that inferences sometimes drawn from the State control of British railways during the world-war, as to the efficiency of permanent ownership and control seem to be misleading. Reference has already been made (above, II, III, 4) to the beneficial influences which the war has exerted in speeding up general standardization, especially in mechanical industries. It has brought innumerable establishments under a strong control. Plant has been kept constantly at work: the Government has been able *in its capacity as sole purchaser* to arrange that operations shall be so multiplied in number and simplified in character that branches of production, which had previously required the judgment and manual skill of a special trained mechanic, could be handled by an unskilled

III, vi, 3. adult, and sometimes even by a child. This work has been done under the authority of Government: but nearly the whole of the brains, by which it has been directed, had been developed under the stimulating influences of free enterprise: this vital consideration is often overlooked.

Unification of railway control under the single authority which directed the production and marketing of most of the more bulky products, which railways handle, has had unique results. It has enabled trains to be long and trucks to be full; and has thus achieved great economies; but in other respects the technique of the industry has remained unchanged. Meanwhile the work of administration has remained in the hands of those who had done it before: the credit of its excellent work, and the blame for many of the mistakes that have occurred, accrue to management by private enterprise, and not by the State. There has of course been no account of the total cost of this work: for both rolling stock and permanent way have necessarily been allowed to fall into poor condition: passengers have submitted to discomforts that would not be borne readily in ordinary times; while delays and restrictions of goods traffic have been regarded as inevitable.

3. *Far-reaching intervention by Government in railway affairs is at once relatively easy and urgent. State ownership of railways.*

The dominant characteristic of the railway industry is the exceptional prominence of routine in its administration as well as in its technique. Attention has been drawn to the general rule that, when once a business has outgrown the scope of private ownership and passed into joint stock, a further increase in its size makes relatively little increase in its dependence on mechanical methods of management: this rule applies to railways more strongly than to most other industries. Again, a public authority, when intervening in the railway industry, will receive more assistance from the people themselves than would be possible in almost any other industry. For the people are the purchasers of the services rendered by railways; they can form a fairly good opinion as to whether those services are well

performed, and they can set out their grievances simply and clearly. They cannot indeed generally form a direct judgment as to the inherent reasonableness of those charges: but they have fair opportunities for making comparisons with charges for similar services at home and abroad; and even for making some allowance for differences in the conditions under which the services are rendered. Moreover railway technique is now very far advanced; and it is, for the greater part, internationalized. Every considerable step forwards, made in any part of the world, is quickly followed everywhere: and even a semi-comatose bureaucratic spirit could not greatly retard progress in a western country, while other countries were advancing rapidly¹.

Again it is a characteristic of railways, as of all transport services which publish their time tables, to keep steadily on their course without paying much heed to fluctuations of general credit and commercial activity. Extra coal trains will be run in winter, and extra passenger trains in summer: profits will increase when general credit is good, and shrink when it is bad: but there is very little change in the work to be done of signalmen, porters, and even shunters and engine-drivers; the aggregate employment offered on the line, otherwise than in new construction, remains nearly constant. Again, though railways are a good deal affected by the price of coal, there is no other raw material which they purchase largely for working purposes, as distinguished from repairs and additions to plant: and partly for this reason, they have little temptation to vary their charges from year to year in accordance with the general fluctuations of prices; and they could not make such changes from week to week. This natural stability is tacitly assumed as the basis of all discussions regarding the authoritative regulation of railway charges.

For these, as well as for political and administrative reasons, railways in an autocratic military State are much subject to military discipline; and indeed the chief station-masters are

¹ But lest anyone should think that uniformity and simplicity of charges would rule under State ownership of all railways, reference may again be made to the thousand rate-books of the Prussian railway-system. (See above, p 448 fn.) A good deal of intriguing and discussion must have preceded concessions, which have sometimes caused rates from Frankfurt to Constantinople *via* Hamburg to be less than those for goods sent from Frankfurt to Hamburg, for use there (*Frankfurt Consular Report for 1908*, p. 45).

III, vi, 3. often retired military officers. Sir George S. Gibb lends his high authority to the common observation that "no country has ever adopted State ownership of railways from theoretical considerations. In each and every instance there were some practical reasons, based on military necessities, or concrete and pressing economic conditions, to meet which State ownership was accepted, not as a system desirable in itself, but as an expedient which, in the circumstances, was considered to be the best practical solution of difficulties which stood in the way of the satisfactory development of railways¹."

The general position has been summed up by Mr Acworth, whose authority is perhaps greater than that of any other Englishman, who is not himself a great administrator of railways. He says that an exhaustive inquiry would "show that State railway systems very rarely pay their own way;...that State purchase of private undertakings is nearly always a financial failure;...that the private railways have to their credit almost every important invention and improvement; that, if it is a question of efficiency and economic operation, comparing like with like, the companies easily beat the State-owned systems; that it is on the private lines that, once more comparing like with like, the lowest rates and the cheapest fares are to be found." But for all that, he holds that State ownership will come soon. For, owners of railway property know that the State seldom buys a property without paying more for it than it is worth. The higher officials of the railways have no cause for anxiety: most of them will continue with at least as high salaries, and somewhat higher prestige. And the rank and file will be able to bring such pressure to bear at the polls, that political considerations will be apt to weigh in matters, that ought to be decided on technical grounds in the interests of the population as a whole, and protected from bias by the special interests of any one section of the people². Some developments

¹ See his address on *Railway Nationalization* delivered to the Royal Economic Society in 1908. It appears that the railways of Switzerland and Belgium were nationalized, in order to prevent their being controlled by foreign holders of their securities. As to Prussian railways, see above, p. 447.

² The paper of which the above is a summary, was read by Mr Acworth at the Congress of the Royal Economic Society, 1912, to which reference has already

of this matter, which appeared as this chapter was passing through the Press, are noted below, Appendix M, 2.

It is true that the control would probably be vested in a permanent Railway Board, which would act independently in minor matters; but Parliament would hardly be able to avoid passing on to the Government any strong persistent pressure, which might be brought to bear by a million voters, male and female, having a direct interest in a large issue relating to their work: and that might be a great evil in itself, and the harbinger of others like to it. The well-to-do classes generally, and the landowning classes in particular, have no doubt used their political power in the past to further their own material interests; and of course some special legislation in the interest of the manual labour classes is to be welcomed as redressing old injustices, and preparing the mass of the people for a larger and higher life than has yet been theirs. But such movements seem to be beneficial and wholesome only when broad. If particular groups of the people look on the polls, as opportunities for advancing their own sectional interests, rather than for rendering an upright and dutiful service to the State, the Mother of all, then the nation as a whole will become less noble, weaker and ultimately poorer: there is some truth in the

been made. At the same Congress, M. Leroy-Beaulieu showed that the railway recently acquired by the French Government had been worked at a heavy loss; chiefly in consequence of the rigidity and lack of initiative shown by its officials, and the political pressure put on it to find places for many more subordinates than were really required for the service. On the other hand Professor Mahaim, of Liège, contended that the acquisition of Belgian railways by the State had conferred such great benefits on the whole people, and especially on the working classes, by low charges and abundant services, as to outweigh its failure to yield a good financial return. Financial statements are obscure: but it appears that they make scarcely any profit beyond what is needed to pay interest on the price of purchase of the original relatively small network of lines; and that they would show a considerable deficit if they did not charge to capital many things, which private railways rightly charge to income. (See the qualifications in Mr G. Seebohm Rowntree's eulogy of railway aids to the Belgian people, *Land and Labour*, pp. 287, 288) Their services are not of as high quality as those of the British railways: they pay very low wages, beginning with three francs a day: the lie of country has made their cost of construction exceptionally low: they are supplemented by water communications, which leaves them free to give all their strength to remunerative traffic, and especially to the large and highly remunerative transport of passengers and merchandise from Antwerp, Ostend and other ports to Germany, Switzerland, Austria and Eastern Europe.

III, vi, 3. saying that under a democratic constitution, "State railways corrupt politics; and politics corrupt State railways." The fear that political influence may distort the course of promotion, is one of many causes that tend to make seniority dominant in public offices: and this may be of great importance in railways: for hitherto "exceptional ability has generally risen from the ranks¹."

Almost every extension of Governmental activity brings with it good and evil, both economic and political. The political side is foreign to the main purpose of the present study: but it cannot be wholly ignored. For, when proposals for large changes in the field of economics are prompted partly by political motives, then they are likely to bring about results which will not be satisfactory from the economic point of view, and will perhaps introduce morbid elements into politics. These dangers are specially great in the case of developments which have had a chequered history. For the political advocate can select an abundance of strong cases all telling on his side, whichever that may be: and those to whom he presents his side of the shield, often fail to get a view of the other side. Thus when any particular technique has worked through difficulties to success, leaving on its path the wreckage of much brave and able enterprise; then there is a good opening for the suggestion that the State should annex the benefits arising from it. These suggestions are seductive; and but little thought is often given to the risk that the dominant technique may be surpassed by later enterprise, or lose part of its value in consequence of broader changes. Such risks are ever in the mind of the ablest business men; but they are apt to be neglected when economic considerations are dominated by political. It is therefore necessary to scrutinize the assumption, which is latent in suggestions for the nationalization of railways, that their present predominance as agencies of transport will remain unimpaired. The following Sections suggest that new developments may possibly diminish the share of the total traffic of a country, which falls to railways;

¹ This statement is made on the authority of Mr Dent, General Manager of the South Eastern and Chatham Railway, p 162 of the Jubilee Number of *The Railway News*, 1914, a compendium of information, to which this and the preceding chapters are much indebted.

but that they may yet tend on the whole to strengthen rather than weaken the case for the nationalization of railways. III, vi, 4.

Simple and uniform as is the business of transport, the opinion held by one generation as to the dominance of a particular method of effecting it, has sometimes been abandoned by the next. We have seen how the shares of some English canals were selling at several times their normal value, shortly before railways obtained an almost complete victory over them: and not much later (in 1844) Parliament approved terms of purchase of railways, which were indeed never put in operation, but would have proved a grievous burden to the nation if they could have been carried into effect¹. And only a few years ago much exultation was shown as to the success of the municipalization of certain tramways, which are now declining in favour relatively to motor vehicles.

4. *Causes and consequences of the present weakness of British canals. Heavy goods traffic is controlled by railways and waterways in a great part of North-western Europe; but by railways alone in Britain.*

It is conceivable that inventions, which have already been in some measure adumbrated, will enable a "helicopter," or other aircraft, to rise perpendicularly from a small garden, and descend again into it: in that case, railways may lose much of their best passenger traffic, and the dissociation of residential districts from centres of industry and trade may be rapidly advanced. No equally sensational change appears likely soon to disturb railway goods traffic: but the advent of motor lorries and other wagons, working easily on modern roads, especially when tar-paved, may perhaps remove the chief obstacles which the configuration of England has offered to the development of an efficient system of internal water traffic: and this may greatly affect railway goods traffic for good and for ill. Up to the present, England's industries and trade have been set at a great disadvantage relatively to those of many parts of North-western Europe, as a result of the decadence of her canals. Only a small part of this loss has been covered by the gains, which her railways have derived from carrying traffic that could have gone

¹ See above, p. 483; and Appendix M, 1.

III, vi, 4. better by water: and it will presently be argued that in the long run her railways might gain from organized cooperation with canals, aided by fresh developments of road transport.

The early phases of the contest of British railways with canals have already been indicated: it was practically decided as soon as locomotives could be made powerful enough to draw heavy goods-trains. Canals might have continued to do good work, if they had been constructed on any general plan. But few long journeys by canal could be made, without passing through hilly country, where numerous locks were required: a lock that will hold a large boat is very expensive; and hilly districts were generally content with provision that sufficed only for small boats. In fact nearly every canal was made chiefly for local traffic. The occasion was one in which a far-seeing strong Government might with advantage have intervened: it might have required that every canal, whose position suited it for use in a national system, should from the first be adapted to barges of considerable size; for the superior economy in horse and man power of moderately large barges was well known. In suitable cases the State might have defrayed part of the expense of a canal, in return for a deferred claim on the income that might ultimately be earned. As things were, the numerous companies, that were responsible for individual canals, seemed perversely to ignore one another's practice: and the strong Royal Commission on Canals and Waterways, 1906—9, found that some companies had made provision for boats of moderate size by long narrow locks, and others by broad short locks; so that many journeys were possible only for boats that were both short and narrow, and therefore very wasteful of the labour of man and horse.

Further, nearly all concentrated British industries had sought hilly districts, first for the sake of water power, and afterwards in order to be near coal measures; and therefore few easy tracks could be found for busy canals except along valleys. Side arms, to right and left of a main track, soon met with high ground; to be traversed only through multitudes of locks or through tunnels. Tunnels were often the more economical in the long run; and they were numerous, but caused great delays. Long distance heavy traffic by canal never had a fair chance; and canal work

in England was seen at its best only in a wide-spreading home of great industries, such as that of which Birmingham is the centre. III, vi, 4

But the great majority of the Commission were not content with so poor a result. They reported that "numerous industrial establishments have settled on German waterways; and that agricultural co-operative associations have established stores on them for the collection and distribution of goods, especially near Berlin....Cheapening the transport of coal and other low value traffic has increased the trade, industry and wealth of Germany; and indirectly the revenue derived by the railways from passenger traffic and higher class goods....Had it not been for the improvement of the waterways, it would have been necessary to spend more money on railways and on goods stations and sidings in districts where the cost of land is high, without probably obtaining an equivalent return in additional traffic." Encouraged by the might of great rivers German canals are being adapted for six hundred ton barges; while those of France are making provision for three hundred ton barges. In both countries the goods traffic by inland waterways is increasing much faster than that by railways¹.

¹ French canals are public routes, open to all; and the charges for freight on them are about a farthing a mile generally; but only two-thirds of a farthing on the more frequented lines. In Germany it is intended that the waterways should pay interest on their capital cost; any surplus being devoted to reducing the capital. But German opinion tends to the conclusion that the water-traffic benefits the railways a little and the country a great deal; because it prevents the railways from being overloaded with traffic that can only bear very low charges, and thus sets them free for more remunerative work: "traffic on waterways has been fostered by light railways and connecting lines, built with State aid for that purpose." (See the *Final Report* of the Commission [Cd. 4979], especially pp. 118 and 122.) Mr F. R. Conder, a pupil of Brunel, told the Select Committee on Canals, 1883, that the British railways would have at least £7,000,000 added to their incomes, if they threw their heavy traffic on canals. See their Report [Q. 2397] the detailed statistics, on which he founded his estimate, are given in its Appendix 12.

The literature of this subject is large; but special reference may be made to *Garden cities and canals*; in Appendices to which Sir John Brunner gives weighty counsel based in part on his own experiences.

The traffic on the canals that connect the great inland seas of North America is enormous, though it gives no good guidance for British conditions: but canal nets in some districts, as for instance in the neighbourhood of Chicago, may develop on lines adapted to the conditions of a small country. Reference may be made to a discussion on Inland Waterways, reported in the *American Economic Review*, April, 1911.

III, vi, 5. England is indeed weak in this respect that, being an island, she has no opportunities for such large schemes as are open to Continental countries. The six hundred ton barge canal, which has been made on the basis of the river Main from Mainz to Frankfurt, may become a most lucrative investment to Prussia, if ever the scheme to which it belongs is completed. For then six hundred ton trading vessels (to say nothing of submersible and other ships of war) will be able to cross the watershed between the Rhine and the Danube; to carry Prussia's products, iron and manufactures at very low costs to Austria, the Balkan States, the Black Sea and the Mediterranean; and to carry back grain and raw material. But England and, in a less degree, Scotland have some special advantages which may ere long be greatly developed by the aid of modern technique.

5. *The relations of Britain's railways to heavy goods traffic may possibly be considerably modified by her exceptional facilities for the cooperation of road motors with her canals, and for electric haulage on her canals.*

There are reasons for thinking that the importance of British waterways has been underrated in the past, chiefly because they have lacked adequate auxiliaries. Consequently but little attention has been paid to the fact that the services rendered by a network of canals are far from being limited to those rendered by railways. They include some of those rendered by public roads, which yield no money revenue; but which are of as much importance to the economic well-being of the country as those of railways.

Anyone can set up a business at almost any point he chooses on a high road; and can have goods delivered to it and taken from it by carts; which may stand at his door, provided they do not obstruct the free way. In like manner even a man of small means can set up a business by purchasing a plot of land on the bank of a canal; and his goods can be delivered direct to it and taken direct from it. If his business extends, he can have a bulge made on the canal, which will give him at small expense the benefits of a private dock, or railway siding. On the other hand the stations of a railway must be at considerable distances from one another, averaging perhaps three

or four miles: and though a strong capitalist can obtain a private siding, he can do this only at so great expense, and under such onerous conditions that very few businesses venture to do so¹. III, vi, 5.

Again, a canal, that is not much burdened by locks, will carry a continuous stream of traffic in either direction, just as a public high road will; whereas a railway must allow for long intervals between consecutive trains. Therefore the growth of population and traffic will seldom call for a broadening of the canal similar to the substitution of four tracks for two on the railway: and "trains of barges" may carry large loads, even on a canal, that is not adapted to very large barges.

It is to be noted that the diminutive scale of Britain's geographical features brings many of her industrial centres, which are not easily to be approached by waterways, into close connection with them by motor traffic. A road, with lines of motors moving in opposite directions, will carry more traffic than a railway can; and motor wagons can pick up and deliver goods much more easily, and under many more conditions, than a railway can. Wherever a road comes near to any part of a busy network of canals, contact can be made between water traffic and road-motor traffic: and since the points, at which goods can be delivered or received, may be ten or twenty times as numerous on a hundred miles of canal as on a hundred miles of railway, nearly the whole area of England may ultimately be in easy contact with canals, at lower charges for heavy traffic than those at present current. The immense capabilities of motor wagons had not been fully developed when the Commission on Inland Waterways settled to its work: but it now seems clear that their aid may enable a relatively small number of canals to carry a very large traffic economically and conveniently, provided that effective traction on the canals can be obtained easily.

Recent experience shows that this can best be achieved by means of central electrical stations, with wires extending from each over many miles of canals: and for this purpose England

¹ The Board of Trade Conference of 1909 arranged a "model private-siding agreement" (*Report*, pp. 7—9): probably few people, without special experience, will anticipate the length, intricacy and troublesomeness of the provisions and restrictions, which are required in the interests of the railway and of public safety

III, vi, 5. and the Southern half of Scotland have greater facilities than any other area containing a like industrial population¹.

Such traction has the incidental advantage of adaptability to single boats and trains of boats of various sizes: it would reduce to a minimum the wastefulness of the relatively narrow canals, which alone are suitable to the orographical conditions of this country. Electric power could be applied on occasion to work the lifts, which may perhaps supersede locks, at all events in districts in which, as in the English Midlands, the supply of water power sometimes runs short. In any case electricity would be a helpful adjunct to water power. It might be supplied, as in Prussia, to factories near the canal, and increase the beneficial tendency of well-appointed canals to check the intensive concentration of industry:—a tendency, which threatens to deprive children of opportunities for invigorating play; and to deprive young and old alike of the opportunities, which abundance of open space offers for invigorating exercise and refreshing repose.

Electricity is unrivalled as an agency for transmitting energy from place to place; and, for that and other reasons it is likely to exert an increasing influence over the structure of transport industries on land and inland water. Also, in its larger developments, it requires way leaves; and is therefore specially beholden to State recognition, and is even in some degree adapted for direct State control. Moreover the six hundred bodies, reported by a Committee of the Board of Trade in 1918 to be generating electricity for public purposes in Britain, employed so many different frequencies that cooperation among them was impracticable. The Committee therefore recommended that a Central Authority should fix standards for the whole country

¹ This plan is already largely used in Prussia; the towage being effected by motors running on tracks on the banks. But there appear to be some reasons for thinking that it may be superseded by, or combined with, a plan that has long been in use to enable heavy vessels to make way against the stream of the Danube, which in some places runs at the rate of seven miles an hour. The plan is to let a strong chain lie free at the bottom of the water: a vessel picks it up, passes it round a windlass (which may be worked by steam power or by electricity); and of course drops it at the stern.

and set up a separate District Electricity Board in each district into which the country should be divided for the purpose. The adoption of a scheme of this kind would facilitate, and be benefited by, the use of canal banks as routes for main wires; and as sites for electricity stations; except in cases in which the generating plant could be advantageously set up in a neighbouring coal-area. This arrangement might be set on foot at once: the full development of a canal system in association with electricity might gradually go far towards enabling Britain to maintain her high place as a leader of industry, in spite of her great inferiority in natural resources to several other countries.

Coal is the chief source, other than the qualities of her people, of Britain's economic strength; and her coal is rapidly disappearing: it is said that she possesses only a fortieth part of the coal known, even now, to exist in the world. Slow transit in water consumes less energy than any sort of traffic on land. And, when account is taken of the inevitable waste of force which is involved in shunting a train, whenever it needs to be broken up, an additional argument is supplied in favour of slow canal transport of coal and other heavy goods; among which chief places must be given to some agricultural products and requisites. The cheapest method of obtaining power from coal for widely diffused uses is to generate it in large quantities, so as to be able to utilize all its by-products (waste smoke being of course eliminated); and to sell it to every class of consumer. Revivified canals would be among the chief consumers of power: they could bring coal by the cheapest means to sites where land was easy to be obtained; and the power which they provided for their own use along their courses, could be made the foundation of electric supply systems for all those parts of the country that are adapted for canal traffic¹.

¹ Movements in this direction might be commenced at once by individual canal companies: but they should be such as would fit in with a comprehensive national scheme, when Government is ready to take that in hand. Specially opportune is the suggestion by Sir R. H. Inglis Palgrave (*Quarterly Review*, Jan. 1918, p. 146) that financial advances for developing canals, though not fitting for ordinary banks, "would be well within the scope of the British Trade Corporation": for that might properly insist that nothing should be spent on half measures that fell below the minimum indicated by the Commission on Inland Waterways.

III, vi, 5. The Commission on Inland Waterways received evidence as to the delivery of coal from the colliery direct into square steel boxes, floating on the Aire and Calder canal. Each of these "compartments" holds forty tons; and thirty of them make a canal train, which is drawn by a tug: they are put on board ship at Goole. In this very successful venture the chain of traffic is complete without aid from a railway: but it seems to contain the germ of a method by which transport by road motor, railway, and canal may be worked into organized unity, with the result of greatly lowering the costs of handling traffic. The method may be seen in the plan on which luggage vans for cross-channel traffic, and many furniture removal vans, are arranged. That is, the receptacle of goods is an independent large box, which could be secured either to a flat railway wagon, or a motor lorry. Of course it could be deposited on the flat bottom of a barge; or it could even be made to float¹.

It has already been noted that Prussian railways have made the "bodies" of some rolling stock detachable from their chassis so that they can be moved by cranes from one truck to another, and thus very greatly diminish the waste of time, and especially of coal, in shunting from one railway track to another. The general adoption of that plan would greatly facilitate the arrangement of through transport of the "bodies" by railway, road motor, and canal, in such proportions as might be most economical, from factory to factory, to merchant's warehouse, or to ship.

As to the important question of the relative costs of canals and railways the following results seem well established:—Of course a railway is not forced to follow contour lines as closely as a canal must; and it therefore needs less mileage than a canal does to connect any two points, except in very level country. The cost of production of its bed is, as a general rule, less than that of a canal of equal breadth: but there is scarcely any amount of

¹ In the course of time it might probably be found that agricultural land derived greatly increased value from direct access to a canal, or even to a shallow and narrow dyke that would hold a boat just able to carry such receptacles to a canal, or other waterway. It is well known that the interchange of soils between land where it is too heavy, and land where it is too light, would often add greatly to the fertility of both: but that generally requires long journeys, and its cost hitherto has been prohibitive save in exceptional cases.

traffic which a fairly broad and deep canal cannot carry: whereas III, vi, 5.
 a railway often needs four tracks for its main line, and many tracks in the neighbourhood of stations. The expense of locks (and even of the much more economical lifts) is sometimes a heavy burden to a canal. But it has little or no need of signalling apparatus: and the buildings, that may be needed on its banks for the development of a large and frequent goods traffic, will mostly serve also as private warehouses. The upkeep of a canal generally costs much less for management, for maintenance and for wages than that of a railway does: canal banks need care; but water does not wear out as railway lines do. The cost of floating stock is much less than that of rolling stock of equal tonnage: it has much less wear and tear and needs much less power for haulage. It is however true that, *under the present conditions of British canals*, the labour directly employed in transporting a given quantity of cargo a given distance is greater on them than on a railway: though indeed engine drivers and guards form only a small part of the employees of a railway.

To sum up and conclude:—The volume of transport, for which accommodation is needed, increases without cessation; and, so great are the difficulties of widening a railway in a crowded district, that it cannot always increase its work, where most needed, save at enormous cost. The quickest trains necessarily stop only in crowded centres; and, in this and other ways, their influence tends towards an ever increasing intensity of centralization of the population. On the other hand canal and road-motor traffic make for decentralization; and in association they may relieve railways of much heavy traffic.

But the revival of canals can be effected only by the State: much capital will be needed for it; the war has deprived national securities of that scarcity-value, which enabled them to be marketed at a very low rate of interest; and to that extent, it would somewhat prejudice any overtures made by the State for the purchase of the railways. But this consideration may probably be of less solid importance than the reflection that organized cooperation of traffic by railway, canal and improved road might be easier and more effective, if the railways (with their plant), together with roads and canal routes, were in a single hand. The

III, vi, 5. operation of canals like that of roads would be open to all, subject to appropriate conditions, and charges for the use of locks, etc.: those who worked on them, not being State employees, would be under no special temptation to use the franchise for personal gain, instead of as the means by which they could discharge their duty as citizens. These observations have ventured on dangerous ground: but greater risks are taken where no attempt is made to forecast the future, while considering methods of action or inaction that will largely affect the future, than by straining inadequate eyes in reading such faint indications of the future as can be discerned by them.

The case for canals has perhaps been prejudiced by comparisons in their favour based on too exclusive regard to the costs of working them, even when the charges for their use make no attempt to defray the costs of making them: railway charges are expected to cover costs of working and costs of railway building. On the other hand a railway cannot, and a canal can, render innumerable services similar to those rendered by a public highway. The abolition of tolls on highways is now universally recognized as good policy; because the revenue yielded by them would be small in comparison with the excess value of the services rendered by a free road over those rendered by a tolled road: the country would be in a poor way if no roads were made save those, the tolls on which would cover the expense of making them and keeping them in repair. The State has constructive duties in the matter: and it is likely to have important regulative duties, if monopolistic combinations should arise to control through rates by road, canal and railway. This consideration affords a small subsidiary argument in favour of the nationalization of railways¹.

¹ While this chapter was passing through the Press, a Committee of the House of Commons on Transport (H. of C. 1918, 136, p. 10) reported that "unification of the railway system is desirable under suitable safeguards, whether the ownership be in public or private hands; proceeding by any of the following routes:—(1) Further amalgamation of railway companies as a step towards unification; (2) Unification accompanied by private ownership and commercial management. (3) Unification by means of nationalization; followed by (a) Establishment of a government department to manage the railways; or (b) Constitution of a Board of Management not directly represented in Parliament; or (c) Leasing of the system to one or more commercial companies."

CHAPTER VII

✓ TRUSTS AND CARTELS: AMERICAN EXPERIENCE

1. *A review of some general causes of the recent rapid* III, vii, 1.
increase of giant businesses, independently of any monopolistic purposes. The poverty of British statistics; the wealth of American.

America has taken the lead in the development and control of vast individual businesses, or Trusts, having monopolistic tendencies: and Germany's Cartels afford the best illustration of the good and evil of sectional associations in industry and trade. Trusts and cartels have so much in common that they cannot with advantage be considered separately: but this chapter and the next are mainly concerned with trusts; while Chapters ix and x are mainly concerned with cartels. As has already been indicated¹, trusts are the results partly of horizontal, partly of vertical expansion: but cartels are in essence horizontal associations: though they may indeed occasionally expand vertically by coalition throughout successive strata of the same industry, or otherwise.

It will be well to begin by bringing together some observations made in Books I and II which are relevant to our present inquiry. In Book I we saw that massive capitals in the hands of mediaeval potentates, political, military, and ecclesiastical, were mainly used for the support of large establishments belonging to their owners; and that the capitals to which the modern methods of production and trade owe their origin, were almost exclusively those of traders. The first prominent uses of capital in the organization of English industry, were seen when "under-

¹ See pp. 215—217, where something is said of curious changes in the meaning of the American term "Trust."

I, VII, 1. takers" sought out domestic workers in various parts of the country, who had but little capital of their own; supplied them with material and instructions for its use, and marketed their products. Shortly afterwards the invention of textile and other machinery, suitable for being worked on a large scale by water power, set on foot the direct capitalistic ownership of all the appliances of production, except only the property that every free labourer has in himself. Thenceforward leadership and control came increasingly to those countries, and to those individual manufacturers in each country, who could invest capital without stint in expensive plant.

Book II was occupied with the causes that have made for the expansion of the business during recent times, in so far as they arise mainly out of the pursuit of increased economy and efficiency in production and marketing. Its general drift was to the effect that, though technical advances in manufacture, in the transport of goods, and in telegraphic and telephonic communication, have caused a continuous increase in the scale of business operations; yet each decade has had its own upper limit to the size, needed for reaching nearly the maximum economy and efficiency in each branch of industry. This general rule was seen to be liable to several exceptions, one of the most interesting of which is found in the dye industries; where progress consists mainly of innumerable relatively small developments of a few master ideas. For these developments can be effected in large laboratories whose processes are secret; so that increased size creates increased power, which takes automatically a somewhat monopolistic form. The new devices could be patented; but secrecy is a more effective check on imitations that are suggested to rivals by a new product; which, not being exact imitations of it, do not infringe its patent.

Meanwhile there has been a steady tendency towards specialization of work and of plant; and—so far as trade union regulations allow—to so complete a classification of employees according to their general ability and their specialized skill and aptitudes, that no one works at any job which could be adequately performed by one of inferior or less appropriate aptitude: and that every foreman and nearly every superior official has just those responsibilities, which will give fair scope for his

particular faculties. These tendencies have constantly increased III, vii, 1. the size of the Representative business unit—that is, of the unit whose costs of production exercise so great an influence on the amount that will be forthcoming to meet any given market demand, that they play a prominent part in the regulation of price under competitive conditions. Formerly the difficulty of obtaining adequate supplies of capital restrained the expansion of the Representative business within narrow limits: but this restriction has almost disappeared under the influence of the ever-growing volume and fluidity of the resources of that market for the command over capital, which is commonly called the Money-market.

And yet, in spite of this elasticity, the influence of technical economies on the expansion of the business unit tends to weaken after a certain size has been reached; partly because the specialization of plant, and the substitution of mechanical forces for that of the human hand, increase the standardization of products; especially in those engineering and other industries, which are ever changing most rapidly under the impulse of technical progress. Hence there arises a certain reversion to earlier conditions. The business of the capable merchant could expand rapidly, and almost without limit, in times when those industries, which preceded modern manufacture, seldom gave scope to considerable capitals: and in the present age the tasks of marketing offer ever increasing scope for vast aggregations of capital. These tasks will be found to give the keynote to the present phase of the development of trusts, and of cartels.

The population of England has been much occupied with large capitalistic production for a far longer time than has that of any other country. The Newcastle Coal Vend anticipated on a great scale many of the policies of German cartels two centuries before they came into existence: and the first monster coal and iron works, dominating a whole country and spreading out their influences far beyond, were founded in Liège by Cockerill, an Englishman. But yet, what seem to be the most characteristic features of the present and coming tendencies towards monopolistic aggregations and federations, are to be sought elsewhere. The total information available as

III, VII, 1. regards British industrial monopolies is very small in comparison with that relating to American trusts. Scarcely any of it has passed through searching investigation, comparable to that which has revealed many of the cherished secrets of American trusts; and has substituted correct information for that which some of them had published. Nor do British trade associations generally rival German cartels in the control of the marketing of particular classes of goods on lines sufficiently firm, and yet elastic, to dominate for good and evil the courses of national industry and trade.

Trusts in Britain are of course subject to the rather stringent regulations as to the publication of their affairs, which are imposed on all Limited Liability Companies: but it has not been thought necessary to obtain much further official information about them; and that which they supply is liable to fall short, at critical points, of the requirements of public interests. The causes of this deficiency are not wholly to be regretted. For many industries, which have sprung up like mushrooms in younger countries, are mainly controlled in Britain by firms, whose traditions go back for several generations, and which are therefore disinclined to sudden changes, and violent courses of strategy: while attempts to make an anti-social use of monopolistic strength in manufacture would generally be frustrated by the arrival of competitive foreign goods in British ports, whence they could be easily distributed over the whole of the small area of the country¹.

British official statistics were cast in a relatively good mould in the middle of last century: but for many decades they followed tradition closely; and they have now much lee-way to make up. An important new departure was made by the *Report of the Census of Production in 1907*; which goes a long way towards giving the needed information in regard to that year. But it had not the advantages of consecutive records and long experience:

¹ This statement, which was in print before the war, is left standing. But the Ministry of Reconstruction has appointed a Committee on Trusts, which is receiving much information, partly confidential, on which to base an opinion. This may be the first step towards more vigorous action, should circumstances require it. Confidential bureaucratic inquiries, at their best, are however a poor substitute for published testimony, which invites rebutting evidence from those who are in a position to detect errors or suppressions.

and it was limited in several ways. The gap may be in some III, vii, 2. measure filled, so far as our immediate purpose is concerned, by some American statistics which will be found in Appendix N.

2. *Associations and agreements of various sorts prepared the way for the rise of trusts in America.*

(We start from the position that nearly the maximum economy of production can often be attained by a well organized business of moderate size: but that the task of marketing efficiently over a large area makes demand for almost unlimited capitalistic resources, unless it is facilitated by association with others engaged in the same industry.) Associations for various purposes, some constructive and some mainly strategical, some temporary and some permanent, some overt and some secret, anticipated the rise of trusts in America; and were often the foundations on which trusts were laid. These associations are known as "pools," because they pool some part of the interests of those concerned. Thus the term is now of broader scope, than when we saw it used in connection with agreements among English railways to throw the whole of the receipts for certain portions of their traffic into a common purse, after deducting only the mere direct costs of moving them. In fact it covers as large a variety of consorted arrangements among possible competitors as do the elastic terms "Cartel," and "Syndicate"; of which more hereafter.

(Pools might have expanded almost as freely in America as cartels have done in Germany, if they had not been opposed by the Common Law which had come from England with the "Mayflower.") For many generations the supply of capital in the country was scanty relatively to the demand, which her vast natural resources made for it; the growing efficiency of English industries, equipped with more expensive plant than a young country could afford, made Americans anxious to see the rise of corresponding industries at home; and aggregations relatively large, though very small in comparison with present standards, were welcomed for their constructive power. But pools and other combinations for the regulation of prices inherited the jealous suspicions, to which combinations of engrossers and others had been subject in the Middle Ages.)

III, VII, 2. This is perhaps the explanation of the paradox that the Common Law was habitually invoked for the repression of temporary combinations in restraint of trade while little attention was paid to the threatening power of permanent growths and fusions of great businesses. (That repression was sometimes extreme: and advocacy of yet stronger measures provoked a reaction; some of the exponents of which proclaimed the sovereign efficacy of absolute free competition with an exaggeration, that rivalled that of the early popularizers of Ricardian economics in England and France.)

(But in the last few decades America has developed the scientific application of economic doctrines to many practical problems, with great energy and thoroughness. More perhaps than any other country, she has learnt that general propositions in regard to either competition or monopoly are full of snares: and that some of the most injurious uses of monopoly, being themselves extreme forms of competition, are not to be restrained by the advocacy of free competition. Consequently she is now engaged in leading the world in the very difficult task of restraining such methods of competition, as are aimed at narrowing the basis of competition.) Nearly all such methods come within the scope of prohibitions of "unfair" competition: there are many difficulties in the interpretation of the term "unfair" in this connection, with which a Court of Law cannot deal without aid; but the needful aid can be supplied by the organized systematic studies of *permanent* authoritative Commissions.)

(The first critical point was reached when public attention was directed to the "Trust," in the original use of the word, set up in 1882 by Mr Rockefeller and others for controlling the trade in mineral oil and its products. It was formed by an agreement among the shareholders of a number of oil companies to make an irrevocable deposit of their voting power with nine Trustees, who would administer the whole as one concern. The plan had two advantages. The trustees had unhampered power; and yet they evaded the responsibilities, which were imposed by the law relating to "corporations" (that is, joint stock companies) on their directors.

This advantage caused many groups of businesses to be

consolidated into Trusts: but public opinion was strongly moved by the danger that the Trusts might become powerful monopolies. And the attempt to exercise the privileges, while evading the legal responsibilities of corporations, evoked the "Sherman Anti-trust Act" of 1890. It condemned under penalties every attempt to monopolize any part of interstate or foreign commerce; and made contracts in restraint of such trade illegal, whereas before they had only been non-enforceable: and "Trusts," in the original sense of the term, were dissolved.)

The movement, of which those Trusts were an expression, was temporarily checked, not so much by the Act itself as by a violent collapse of credit, caused by the fear that debts might be repaid in a depreciated currency. But that danger quickly passed: and, the industries of the country being in a substantially sound state, the reaction from the previous gloom resulted in a great outburst of activity with rapidly rising prices, and an almost unparalleled volume of profits. The public is always apt to exaggerate the importance of a short series of years of high profits; and to estimate the capital value of a business on the assumption that such profits represent permanent prosperity. This general tendency was strengthened by the accident that, just at that time, several giant businesses were being developed with remarkable success by the men of genius, who had created them. The technical economies of production on a very large scale in heavy iron and steel, in mineral oil, in beef products, in agricultural implements, and in some other things were attracting general attention. They were emphasized, and exaggerated by constant repetition of cases in which large scale production and dealing had exceptional advantages: and thus, by honest as well as by interested teachings, the general public was prepared for the belief that, if the chief businesses of any kind in any market were united, the net income and the true capital value of the consolidation would much exceed the aggregates of those of the original businesses.)

Consequently, the promoters of a consolidation were eager to buy businesses, that might compete with it; or even be used by an opponent as a basis of operations against it. They had little interest in keeping down its total nominal capitalization.

III, VII, 2. for their main aim was to dazzle the investing public with a show of a sufficient domination of the industry concerned, to be able largely to control prices; though of course they made no overt attempt at monopoly. Thus they often bought at high prices establishments, which it was found best to close on account of bad location or inefficient plant.

They endeavoured to evade decisions of the law-courts which had condemned "Trusts" (in the original use of the term) by putting the whole, or at least a working majority, of the shares of the constituent companies into the hands of a small number of men, under the form of a "Holding Company": these men controlled the policy of the whole, and in some cases administered a part of it. But Holding Companies were declared by the Courts in 1904 to contravene the Sherman Law, and they were dissolved. Thus the campaign against Trusts, in the old sense of the word, seemed to have been brought to a successful issue: but in fact it had merely changed its form. In suitable cases the companies, whose securities had been held by a Holding Company, were fused, in one way or another, into a single giant business. We now leave Trusts in the earlier uses of the term, and consider only giant agglomerations of business.

An estimate made in 1904 allotted a capital of about seven thousand million dollars to industrial trusts. About half that amount was assigned to "franchise trusts"; that is water, gas, electricity, tramway and other undertakings, which make exceptional use of public highways. The nominal capital of a third group, that of railroads, was about equal to that of the other two together. A fourth group consists of financial businesses: but the power which they wield would not be adequately represented by their capital even if it could be ascertained with tolerable accuracy; while of course much of it consists of holdings in other "trusts" and has therefore been reckoned already¹.

¹ A Committee of the House of Representatives in 1913 enumerated over two hundred consolidations, each having some degree of monopolistic strength. An estimate, given in the Report of the U.S. Census of 1900 (vol. VII pp. LXXV—XCVI), indicates a large percentage of failures among the early combinations; and Mr C. N. Fay, an apologist of trusts, gives particulars of "the failure of combination to monopolize," and even to succeed financially, in his suggestive *Big business and Government*.

In 1890, the Sherman Law, not having taken effect, the word "trust" was

The large majority of industrial trusts are of course to be found in those manufacturing industries, in which an increased scale of production brings with it increased economies. But in fact they do not owe very much of their power to that advantage: for, with some exception for the steel industries, a capital very much less than that required to dominate the market, will suffice to obtain every important advantage that belongs to production on a large scale. Nearly all the chief trusts in the group, now to be considered, owe more to the economies of marketing on a vast scale than to those of production on a vast scale. But these and similar matters can be presented most vividly by brief sketches of some leading trusts.

One rule alone is almost universal. It is that each great industrial trust has owed its origin to the exceptional business genius of its founders. In some cases the genius was mainly constructive: in others it was largely strategic and incidentally destructive; sometimes even dishonest. But in general there seems to have been present a notable power of visualizing the future. The Duke of Wellington, speaking before the day of aeroplanes, said that a chief business of his life had been to construct mentally the view of the enemy's position on the other side of intervening hills, and the founders of great trusts have been eminent, even among able business men, for their power of anticipating future relations between productive resources and market requirements.

3. *The basis of a firm but wisely limited control of monopolistic tendencies in American business is provided by systematic official studies. The experience thus gained gives valuable guidance as to some urgent problems of British industrial policy.*

It is argued by Americans that the vagueness of the Common Law is on the whole a source of strength. Definite and

still used in its early sense; and the present writer told the British Association that their future seemed to him doubtful. They were in fact vanishing. But a recent writer has authoritatively condemned that prognostication, under the impression that it applied to "trusts" in the very different present use of the term.

III, VII, 3. precisely worded Statute Law is adjusted in matters of detail to the circumstances of the time at which it was made; and cannot be readjusted to new conditions without fresh legislation. Common Law, on the other hand, is interpreted by progressive, judicial decision in accordance with the conditions of each generation, in so far as the Supreme Court, under whatever name, feels justified in setting aside inferences drawn from previous judicial decisions; thus the Common Law is constantly being created, while being only interpreted nominally. The faculties required for this work are not specially legal; but they are in great measure trained by the lawyers' close contact with the affairs of business life, and their relations to public interests; while the decisions of the higher tribunals, by which most of this legislation is effected, indicate a statesman's faculty of discovering and conserving the true interests of the public, even when not directly represented in court. The habits of life of Anglo-Saxon peoples fit them in an exceptional degree for alert exercise of the mind, without much special training; but experience has gradually shown that, as the public interests in business become larger, while business itself becomes more complex, a chief task of practical sagacity is to discover the directions in which it needs to be supplemented by systematic studies, and to organize those studies.

Since the operations of transport are to a great extent standardized by natural causes, their policies can be subjected to some external control without adding greatly to those restrictions on the initiative of railway directors and managers, which are imposed by Nature herself. This control is specially appropriate; because a railway, or group of railways, has something of Governmental power within its own domain; and therefore the work of a Board of Trade or a special Commission in regard to the regulation of railways is fairly homogeneous and relatively simple.

But industrial monopolies are of very various characters. In many branches of production technique changes rapidly; and the methods and purposes by which particular aggregations or federations seek to control prices, are ever presenting new developments. A great trust starts with expert knowledge of its own business; it can hire the most expensive expert witnesses

to support the arguments of its highly paid counsel—their- III, vii, 3.
selves in some measure experts—on technical points. Against
so strongly fortified a defence little can be done by a relatively
small and impecunious business, which thinks itself aggrieved;
and still less by the inarticulate public, which may be the chief
sufferer in the long run. (A complete remedy for this social
hurt is not to be had: but a long step towards it was made
by America in 1903, when Congress set up the Bureau of
Corporations to investigate such cases, to enforce a limited
degree of publicity, and to make recommendations¹.)

(The success of the Bureau of Corporations in checking abuses
of monopolistic power by merely publishing the results of its
investigation of them, encouraged Congress in 1914 to raise its
status, under the name of the Federal Trade Commission, to a
level with that of the Interstate Commerce Commission: and
at the same time to pass a second (the Clayton) Anti-trust Act;
which strengthened the provisions of the 1890 (Sherman) Anti-
trust Act, for the enforcement of which the new Commission
was to have a care. That Act declared in general terms several
practices to be “unlawful” when, but only when, “the effect”
of any one of them “may be to substantially lessen competition
or tend to create a monopoly in any line of commerce.” The
word “substantially” is perhaps not exactly suited to the pur-
pose of the Act: and the use of the term “unfair” competition
in other parts of the Act, as well as the interpretations of it
by the Courts, recognizes that the mere expansion of an ably
managed business must necessarily contract the area, over which
the competition of other businesses in the same industry can

¹ It authorized the Bureau to investigate “the organization, conduct of and management” of any appropriate business corporation; “together with such information and data as will enable the President of the United States to make recommendations to Congress for legislation for the regulation of such commerce.” This information “or as much thereof as the President may direct, shall be made public.” Some of the evils sought to be remedied by its work are indicated in its *Report* for 1905, by saying:—“Much legislation has been enacted which is futile and often harmful because directed either at the modification of great economic laws, which cannot be modified by statute; or at the treatment of sporadic and sensational facts. Estimates, guesses, prejudices, and limited individual experience have been the bases of action, rather than broad and final conclusions based upon accurate, properly arranged masses of

III, VII, 3. have full play.) The Courts have sometimes in effect read in the word "unreasonable" before "competition" in the Act. What is really condemned is destructive competition. One runner may outdo his rivals by greater energy as much as he can: but, if he puts his hand on another's shoulder to pull him back, while pulling himself forward, that is the unfair competition against which the Anti-trust Act is directed.

(The purpose of the Federal Trade Act is to constitute an administrative and semi-judicial body of high standing, which shall continue with enlarged powers the work of the Bureau of Corporations) and collect such information in regard to the operations of giant businesses, as shall enable a good judgment to be formed on the character of the competition, which they wage against less wealthy rivals. It is to investigate any appropriate case; and, after hearing, issue an order directing compliance with the law. (If this order is not obeyed, it may apply to the appropriate Federal circuit Court to enforce it) and that *must* take its findings, if supported by testimony, as conclusive (subject to certain conditions); though of course the findings may be set aside by the Court on a point of law¹.

This slowly matured and vigorous scheme has exceptional interest for Britain. For her attention has been much attracted by the events of the world-war, and by other causes, to the economies and facilities which giant capitals can obtain in production and in marketing. And since Britain's free trade, together with other causes, has in great measure safeguarded her against malign uses of any monopolistic power thus obtained, her people have been increasingly inclined to look with favour at the beneficial results of the massive organization; while taking little thought as to the dangers that might arise from it. In fact "combinations," when they are merely particular forms of *constructive cooperation*, often bring with them such great material

¹ It should be observed in passing that the Anti-trust Act applies to combinations of railways, as well as industrial trusts. But the chief gravamen of the charges under it against railways refers to the hurt which railway fusions may inflict on customers of railways; while industrial trusts are charged with depriving other businesses of reasonable access to markets, in the first instance; and thereby injuring the public ultimately.

advantages, as almost to hide from view any contraction of the field for the creative enterprise of young businesses that they may cause. That evil might probably be rather small, if Britain's financial and military position remained substantially as it was before the war. For, though history records few cases in which constructive cooperation has not after a while degenerated in some degree towards restrictive and even destructive uses of monopolistic power; yet the same brave and free spirit, which has kept British ports open to all products that compete with her own, might have continued to ward off monopolistic pressure. III, VII, 3.

But the war has enlarged the range of things of which the country is unwilling to be greatly dependent on external supplies: and it has necessitated so great an increase in the Revenue needed by the Exchequer, as to strengthen the hands of those who desire to levy import duties on many manufactures. Such proposals are sometimes associated with suggestions that combinations for the regulation of prices should be sanctioned and even encouraged by the State. The avowed aims of such a combination are no doubt constructive: it is to be militant only in regard to invasions of British territory by powerful foreign producers or traders, singly or in combination. But history shows that men engaged in any industry, which is faced by foreign competition, are inevitably and almost unconsciously impelled to exaggerate any indirect injury that may result to the public from such competition; and recent events suggest that human nature has not changed in this respect. Such men have special knowledge of the industry and trade under discussion: and complacent officials have always been inclined to take the path of least resistance, and accept expert estimates in these matters with but little consideration of the unconscious bias by which such estimates may have been warped. The dangers directly arising from this source are increased, when those, who speak thus with expert authority, are associated for the attainment of any common ends, however beneficial in themselves: for such conditions are specially likely to taint constructive cooperation with some touch of militant restrictive monopoly. The recent courses of German cartels will be found to point in this direction. For the present we are concerned with

III, vii, 4. American experience to the effect that, if the danger becomes considerable, it can be adequately met only by a special official organization; which differs from an administrative Department of Government in that it concentrates the greater part of its energies on progressive studies, resembling those of a great technical laboratory¹.

4. *Actions, which are harmless on a small scale, may become injurious when practised on a large scale, especially if their purpose is to obstruct the highway of business.*

Under ordinary circumstances, an individual tradesman, who has taken offence at a customer, may refuse to deal with him: but a conspiracy to drive a man from the neighbourhood, and render his property in it valueless, cannot be justified under ordinary circumstances. The law against malicious boycotting is akin to an anti-trust law: each aims at preserving the right of well-behaved persons to make free use of the common highways of business.

The law and commonsense alike sanction the meeting of any two people, or the standing of a cart for a time by the curbstone, even in a busy highway. But a large assembly of persons (or a collection of carts) sufficient to hinder the full use of the thoroughfare by others, is broken up by the police: and if the obstruction can be shown to have been deliberately planned with the purpose of injuring some person's business, or otherwise annoying him, it is an offence. Wrong-doing of this kind cannot be directly controlled by Courts of Law, nor can the initiative in complaint against it be left to private action. It must be controlled by the Executive, whose ordinary constable clears the highway by appropriate orders; the magistrate being ready in the back-ground to enforce judgment in any case in which the policeman's orders are resisted. The Federal Trade Commission has responsibilities, similar to those of the policeman, in regard to vast highways on which the traffic is immensely complex. Long-continued, organic and scientific study of great

¹ Some exceptional provisions in regard to American export trade are noticed below, in Chapter XII.

masses of detail takes the place of the policeman's simple view III, VII, 4. of the obstructing crowd; and its decisions are authoritative, subject to certain conditions. It is responsible for taking the initiative, and coming to a provisional conclusion as to whether any price discrimination, or exclusive dealing, is a *bonâ fide* constructive business transaction or is a destructive strategical manoeuvre aimed at preventing a rival from making use of the highway of business. The first place among unfair methods of competition, which are denounced by the Anti-trust Laws, is held by price discriminations; the chief variety of which is that of malign local price-cutting.

A dealer is *primâ facie* free to choose the prices at which he sells his goods. If, for instance, he has two shops, one in the East end of London and the other in the West, he will often ask higher prices in the West than in the East; partly because he cannot sell at high prices in the East, and he cannot pay the high rent of his shop in the West if he charges low prices there: his action rouses no suspicion of malign motive. But the Standard Oil Company habitually pursued the consignments of a rival to retailers; and told them that, if they persisted in buying from the rival, it would sell its oil close to them at a price which involved a temporary loss to itself: it thus rendered their trade impossible. "It did this so systematically and with such large resources, that many independent refiners sold out to it at a loss; and others, who would have entered the business, refrained. "Size without any predatory power makes a corporation beneficent; but size with this evil endowment makes it a menace to freedom....The prospect that a trust will resort to predatory practices terrorizes the rival in advance, and prevents him from appearing¹."

The duty of the State in this matter is not to hinder the action of the great forces of economic evolution; even when they involve the destruction of old businesses, which have no other fault than that of being unable to turn those forces to good account. Its protective intervention is not called for on behalf of incompetent competitors with the trust: but it is called for when the trust sets itself to destroy a rival, who is

¹ Clark, *The control of trusts*, p. 123. As to some discrimination in retail trade, see Appendix J, 3.

III, VII, 4. prepared to sell things of good quality at lower prices than the trust is charging for them elsewhere. The greater the immediate sacrifice which the trust is willing to make in order to drive such a rival off the highway, the greater is the *primâ facie* reason for thinking that the interests of the public require that the rival should have a fair chance of developing his business, and attaining economies of production on a large scale, with fresh enterprise. The case is only *primâ facie*: for instance, the purpose of the rival may be to blackmail the trust: and the task of investigation is therefore both difficult and delicate; but it is not impracticable¹.

(Discriminating prices are commonly associated with the "dumping" of certain goods, especially by countries with high protective tariffs, in foreign markets. But, as will be seen later on, the chief purpose of such dumping is to maintain prices in the home market: the desire to destroy rivals in foreign countries plays a much smaller part in such dumping than is commonly supposed.) On the other hand, the intimate financial association of some American railways with particular powerful trusts has caused price-discriminations, aided by discriminating railway charges, to attain a portentous power of destroying inconvenient rivals. Many are the devices, by which the laws against price-discrimination with a monopolistic purpose are evaded; but the Interstate Commerce Commission and the Federal Trade Commission, working in unison, seem likely to repress most of them ere long: and indeed monopolistic strategy of this kind is so definite that it can hardly evade the pursuit of painstaking, capable investigation, well supported by authority; though it has relatively little to fear from those milder and less penetrating forms of bureaucratic control, which have hitherto sufficed for most of Britain's needs².

¹ The nature of the task will be illustrated by the notes on individual trusts contained in the following chapter.

² It may be added that Canada is hostile, towards monopolies: her plan for controlling them is less systematic than that of the United States, but more systematic than that of Britain. Subject to unimportant restrictions, any six full citizens may apply to a judge; state in writing that they believe a certain combine to exert an influence injurious to public interests, and ask for an investigation. The judge is then bound to give them a hearing; and if he thinks a *primâ facie* case has been made out, he writes to that effect to the

5. *Relations in which the prices charged by far-seeing trusts, when not engaged in campaigns against rivals, stand to the probable costs of "independents."* III, VII, 5.

Before passing to the consideration of particular trusts, it may be well to say a little in continuation of earlier discussions as to the relations between cost of production and the price which a far-seeing trust will place upon its goods, in the absence of any strong incitement to destructive strategy. It has already been observed that a conditional monopoly must take account of the cost of production which its competitors must meet; but the particular forms of conditional monopoly, which belong to a modern trust and its relations to "independents," are so definite that there may be an advantage in returning to the subject.

The reports of the Industrial Commission appointed in 1898 to inquire into the conditions of American labour were, till recently, the chief authority as to the conditions of American trusts. It reached the following important conclusion:—"The testimony of substantially all of the construction men is to the effect that, unless a combination has some monopoly of the raw material, or is protected by a patent, or possibly has succeeded in developing some very popular style or trade-mark or brand, any attempt to put prices at above competition rates will result eventually in failure, although it may be temporarily successful." It finds that a short-sighted policy looks at the proportion of the total output of a certain commodity which is controlled by a trust: if that be large (and there are many trusts which

Registrar of Boards of Investigation, who must appoint a Board for the purpose. It is to consist of three persons; one nominated on the recommendation of either side to the question; and a third nominated by those two. Their report is published in the *Canada Gazette*: if unfavourable, it may lead to the withdrawal of any tariff protection which the offenders have had, or to revocation of patents; together with a fine which is increased with each day (after a certain interval) during which the grievance is maintained.

Somewhat similar provisions are included in the Australian Industries Preservation Act 1906—10: and in 1912 an Australian Interstate Commission of three members was set up, whose extensive duties included various steps for dealing with combinations that tended to restrain trade or commerce by unfair competition, or to the detriment of the public. New Zealand has moved in the same direction: and South Africa has done the like in regard to the Meat and Shipping trades.

III, VII, 5. control about two-thirds of it), there is a temptation to argue that the trust can regulate prices without much attention to cost of production. The argument is valid for short periods, but only for those¹.

For a far-sighted trust's policy looks rather away from the ephemeral relations between the output under its control and that of the independents: (its main business is with the potentialities of independent output in the future.) If concerned with minerals, it cares little for minute calculations of outputs of mines already opened; it cares much for estimates of the cost of opening out new mines within striking range. It cares little to know what part of the plant owned by the independents is nearly obsolete; it cares much to know what are the difficulties in the way of starting rival works of equal efficiency with its own, not necessarily for all parts of its work, but for some of the more lucrative. It takes account of the fact that, now more than ever, a powerful capitalist often likes to push his way even into an industry with which he is not personally familiar, but in which he knows that high profits can be reaped. Such a man, in conjunction with associates who have the requisite technical knowledge and administrative faculty, and who have sought out him, or have been sought out by him, may be able to put up a plant that will be as well or better organized than that of the trust, because it will incorporate the most advanced ideas from the first. (Accordingly a well-managed trust reflects that, if it puts its prices so high as to hold out the prospect of good profits to new rivals, after fighting through the campaign of underselling which it is prepared to arrange, the rivals will appear. That is to say, it adjusts its price rather closely to the cost of production *including profits*, on which a new-comer in an ordinary competitive market would base his calculations. But it adds to this something for the insurance against extra risk which a new-comer into its market would expect to face.

It may seem that this cost of production is of a different kind from that which the producer in a competitive market needs to watch. But that suggestion goes too far: the difference between the two cases is mainly one of degree. It is true that, in a competitive market a producer's connection has no firm

¹ *Report*, vol. XIII. pp. xvii, xviii, and xxi.

hold of a long life. He must give himself to holding his own III, vii, 5. against existing rivals; and it is not generally worth his while to spend much care on the effects which his action may have on the appearance of new rivals: for they are sure to appear in any case.

In this matter his position differs from that of even a conditional monopolist. But he also has his far-seeing strategy as well as his tactics for passing occasions: and his strategy has to do with the costs of whole processes of production. The prudent leader of a great trust will remember that, though there are very many men competent to manage a small business, there are not many who can manage a large one; and that only a small percentage of those, who are competent for the affairs of a large business, can rise to the high peak of the management of a huge trust. There is always "plenty of room at the top": and, if the highest post is very high, the difficulty of finding adequate successors to the few intellectual giants who have built the lofty edifice is almost insuperable. Youths of exceptional faculty are often found in lowly work of various kinds in large businesses as well as small. But, as soon as they become conscious of their strength, they are likely to be attracted by the chance of developing their own powers of initiative, and the lower posts in a vast business seldom offer as much scope for that, as do those of a small business, in which, on occasion, a subordinate may be called to do what he can at a task which has been supposed to be beyond his powers. It has been justly said that small businesses are the nurseries for the best brains in large businesses.

The trust must therefore reckon with the possibility that it will not continue for long to have as large a share of the best business genius of the country as it had, when it first achieved its semi-monopolistic power. Its capital may enable it to outbid all others when a new important patent is to be sold; but the weaker successors of the strong men who have created its success may fail to appreciate, and even to welcome, the genius of men who are stronger than themselves. It seems probable that the combative phase of monopoly, introduced by some industrial trusts, may pass away more quickly than earlier phases in times of less rapid evolution. Probability is a

III, vii, 5 chief guide in all matters: it is the only guide in regard to matters, as to which the present age can find no close precedent in the past, and cannot expect to yield close precedents to the future. Thus there are many reasons why a trust should not make use of its semi-monopolistic power to put its price much above the level at which an independent business could produce, if not hampered by the pressure of the great giant: the policy of destroying independent rivals in order that it may raise its price is not so much to its own interest, as appears at first sight.

But this consideration may have little weight with bold enterprising men, who value success for the proof of power which it gives, almost as much as for the wealth which it brings. And, since many monopolies owe much to the partial exclusion of foreign competitive products by a protective tariff, there seems much force in the suggestion that, when a commodity protected by a duty comes under the control of a combination, the duty on it should be revoked¹.

¹ Francis Walker, *Causes of trusts and some remedies for them*, p. 23, referring to the precedent set by Canada; see above, p. 523 fn.

CHAPTER VIII

TRUSTS AND CARTELS: AMERICAN EXPERIENCE, CONTINUED

1. *The United States Steel Corporation is a unique aggregation of many giant businesses; but it leads, rather than controls, the steel industry.* III, VIII, 1.

We may next consider some illustrations of a general rule, which has already been partly indicated. It is that an aggregation so powerful, as to be a representative "trust" in the present use of the term, is likely to be under no great temptation to have recourse to those exceptionally cruel and malign forms of competition, which have frequently been used by a business on its way to obtaining the dominant position in an industry. Moreover, when such a dominance has been long set up, the leaders of the business are likely to be well advanced in years; to be sensitive to public opinion; and, above all, to have learnt that, though a triumphant pleasure attaches to the attainment of great riches, their possession does not insure the full fruition of life. A man may have used fierce, and possibly even somewhat unscrupulous, methods of combat, while still uncertain of success; and yet, when he has fully attained great wealth and power, may perhaps use these chiefly as means by which he can earn the respect of others and of himself. Instances of this, while not rare in old countries, are specially conspicuous in America: and they appear to be contributory causes of the tendency of some trusts, which have had troubled courses in early days, to take on a milder character, and to act with more careful regard to the interests of the public, when they have once attained almost irresistible power. But unfortunately the peaceful position thus attained depends in great measure on personal and other conditions, which are liable to change: and

III, VIII, 1. America is in no way relaxing her energetic and thorough studies: they are pioneering the way for the rest of the world by examining the responsibility of the State in regard to the powers for evil, as well as for good, which modern conditions have put into the hands of monopolistic aggregations and associations. The facts which follow in this chapter, are not in any sense consecutive or even fully representative history: they are selected merely as particular illustrations of broad tendencies.

It has already been observed (above, II, III) that an exceptional combination of causes has promoted consolidation in the heavy steel industries. For the metal can pass through many stages without ever getting cold: waste gases can be used to generate horse-power to be applied directly, or through electricity; and high chemical and other technical skill can find large scope in the supreme direction of many massive processes. Rolling mills, engine shops, etc., can often find occupation in slack times by enlarging and repairing their own plant, and that of the furnaces, and above all of the mines: and rails or plates, which happen to have been made unmarketable by slight flaws, can yet be turned to account in posts of no great responsibility about the mines, the furnaces, etc. Thus a business, which owns the necessary supplies of coal and iron ore, is in a very strong position: and one, that lacks these advantages, is likely, after falling into difficulties, to be willing to accept terms of purchase that will yield a profit to another business, which is fully equipped.

These conditions, as we shall see in the next chapter, have contributed towards the formation of the German Steel-works Union; which is the most far-reaching, though not the most firmly established of all cartels: and their tendency to create a giant consolidation in America has been strengthened by other causes. For, though it is true that a capital of some twenty million pounds suffices at present for the equipment of a single set of fully efficient steel works; yet a fusion of many works in different parts of the Continent of America is able to make considerable savings by sending each order to be filled at that works, which is best adapted for it by situation, special appliances, and freedom from other engagements, etc.

Already in 1900 considerable progress towards such expansion and fusion had been made by the Carnegie Company; which owned much of the best iron ore and coal for coking purposes in America. In 1900 disturbances were threatened by proposed extensions downwards of some of the higher stage steel businesses; and by plans of Carnegie for making a railway of his own to carry much of his traffic, and by other developments. This brought powerful financial interests into the field, and with them came the notion of monopolistic advantage: it had not previously appeared as a motive for expansion: but gradually rose to a level with the pursuit of technical efficiency.

Stress was laid on the inevitable rise in the value of the iron and coal properties owned by the companies, which were to be amalgamated; and, partly for this reason, the favourable terms, which Carnegie claimed, were conceded to him. Ultimately nearly all the principal steel businesses were fused into the United States Steel Corporation, with a total capitalization so much in excess of the market values of the constituent companies, that the promoters were able to take, as their own remuneration, cash and securities, which were worth at the time some sixty million dollars and soon rose much in value.

This amalgamation created an epoch, first by the methods of its capitalization; and secondly by the admission, practically involved, that the additional economies of administration to be obtained by an increase in the size of an individual establishment, gradually dwindle as the size increases.

The second point may be taken first. Several hundred separate properties were included in the great amalgamation: and in order to keep the subsidiary companies efficient, considerable autonomy was conceded to each of them. But, lest each should regard the others as competitors rather than allies, an elaborate profit-sharing plan was set up, purporting to interest the President and the other officers of each in the profits of all the others. And meanwhile the activity of each was stimulated by setting before it the ambition to show results as good as, or better than, those of any other doing like work under like conditions.

The market values of the various companies incorporated reached a total of eight hundred million dollars: which, ac-

III, viii, 1. According to the investigations of the Bureau of Corporations, exceeded the total value of their tangible properties by only one hundred million: but the total capitalization of the United States Steel Corporation in 1901 (including underlying bonds, etc.) was fourteen hundred million¹. The greater part of this excess is apparently due to the valuation of the ore properties; which the constituent companies had reckoned at one hundred million, and the Corporation at seven hundred million: this may indeed fairly be regarded as an instance of the common practice of promoters of a fusion, under which Preferred stock is issued to the full amount of the visible properties of the several businesses. Equal amounts of Common stock, given to purchasers of Preferred, are understood to represent the good-will of the businesses fused; together with the value of the additional earning power, which the fusion is expected to derive from its new economies, and its monopolistic advantages. This practice of capitalizing good-will is not altogether unreasonable; but it has been the cause of many abuses².

The values of the ores owned by the Steel Corporation have risen greatly since 1901: its chief businesses have been excellently managed; and, even before the great war, its securities rose sufficiently to make this high capitalization appear not very unreasonable. But of course it owes much to the Protective tariff, which enables it to sell some of its goods at higher prices than those at which similar European products could otherwise have been obtained.

It has not attempted to regulate prices independently: but has taken counsel with its chief competitors as to the prices which the market will bear. Its lead has generally been willingly followed; and indeed there are some who think that its statesmanlike policy has been even more advantageous to some of its rivals than to itself: certainly its business has not grown as fast as some of theirs have. At least nine-tenths of the total steel output of the country appear to be now represented at the conferences, held under its lead, at which schedules of prices and other matters are arranged.

¹ See the *Report of the Bureau of Corporations on the Steel Industry*, vol. 1, 1911, pp. 166—169 and 373—382.

² See above, pp. 335—6.

The position is however not free from anxiety from the national point of view. Ere long nearly the whole of the iron ores in the country may have been explored, and be owned by a few giant businesses, acting more or less steadily in concert. The great Trading Companies of yore worked for some time bravely and steadfastly for their own profit, and the prosperity of the country; but, as time went on, the places of active Venturers, strong in their self-restraint, were filled by weaker men, inert and greedy of gain. No such extreme deterioration is indeed likely under modern conditions: but there may be increasing need for vigilant study, on the lines set out for the Federal Trade Commission, of the action of what may become in effect a monopoly many times more powerful than any yet known. For it would have "its feet firmly planted on the ground": that is, it would in great measure control those resources, supplied by Nature, without which no rival to it could make headway. Even incomplete monopolies, thus planted, are likely to be more solid and durable than apparently stronger monopolies if based on superiority in manufacturing technique, or in business ability, or in financial strength; or even in all three together.

This class of consideration applies to several other American industries, in which there has as yet been either no monopoly or only a local monopoly. For instance, the Reports of the Bureau of Corporations on the Lumber industry, indicate growing tendencies to local concentration of ownership of timber. Timber lands are already becoming rather scarce; and a powerful financial movement to concentrate these concentrations might develop a dangerous monopoly of timber. Further, lands, that have been denuded of timber, are commonly sold at low prices; and, if bought up by strong capitalists, might introduce a hitherto unknown tendency to gigantic ownerships of agricultural land¹.

Again, the Bureau of Corporations has called attention to the danger that the chief sources of water power may be exploited

¹ On the other hand the Industrial Commission itself suggested "combination under proper supervision" as a remedy for the waste of national resources involved in the use of fine anthracite coal for purposes for which inferior coal would suffice. An individual coal owner cannot materially affect the price of coal in the winter; and he will suffer, if he has not kept his men together in the summer while others have done so. But a single corporation, owning the

III, viii, 2. by a few strong capitalists. It is true that its price must in the long run be governed by the price of power generated by coal: but the great excess of the cost of such power over that of power obtained from water on a large scale, may yield a monopolistic revenue, which properly belongs to the State, and needs to be jealously controlled.

Σ. The power of exceptional constructive ability, combined with astute destructive strategy, is illustrated by the history of the Standard Oil Company: its financial strength has gradually overshadowed a considerable part of American business.

Attention has already been called (III, vii, 2) to the facts (1) that the Standard Oil Company was the first to constitute a "trust," in the original sense of the term; (it then represented an association of businesses, effective for strategic purposes, but yet evading the prohibitions of monopoly, which the law-courts had based on the Common Law); and (2) that its remorseless underselling of rivals, with less capital than its own, who were making good supplies at reasonable prices in particular localities, was a chief cause of the stringent legislation against local price discriminations. But the Company has never had any approach to a monopoly of the sources of supply of mineral oil: its monopolistic power has resembled that of a railway, whose network practically covers a great district; while it is able to evade any regulations that may require it to give facilities for the traffic of other companies to pass over its lines.

It began with a comparatively small group of lines of pipe, and could do little without the aid of railways. But it offered very large business to some of them: it played off one against another with great ability, not disdaining corrupt influences; and it was thus enabled to induce some of them to carry oil for it more cheaply than for its rivals. It hampered those opponents not merely by selling at specially low prices in their neighbourhood; but also by paying for a time very high

whole field, might do better for the country by refusing to work much in the summer; and allowing some scarcity of coal in the winter to raise its price sufficiently to cover the cost of attracting miners back in the late autumn; when demand for labour in agriculture, building, etc. was slackening.

prices for crude oil from any wells, from which a rival had expected to derive his supplies. It worked on these plans, in so far as not estopped by the law-courts, with great ability and persistence, and in many fields of enterprise: insomuch that, though it had a capital of only a million dollars in 1870, it was paying forty million dollars in dividends in 1907¹.

Again it took a leading part in the use of bogus independent companies and fighting brands; which it used to destroy rivals in places where its monopoly was threatened: meanwhile it maintained high prices where it was exempt from competition. A bogus company, really owned by the Standard Oil Company, would offer good oil at a low price in the neighbourhood of an obnoxious rival: it would search out his customers, retaining a staff of spies for the purpose, and offer oil to them at exceptional rates. Even where there was no urgent fear of competition, a similar company, representing itself as an opponent of monopoly, would turn a prevalent anti-trust sentiment to the account of the great trust. "Fighting brands," which it seems to have been the first to use, are somewhat analogous to the fleet of "fighting ships," maintained by the Hamburg American Company to underbid obnoxious rivals². These brands differed in no essential from those in ordinary use: but they could be offered for militant purposes at low prices, without affording ground for a charge of "local price cutting"; for they were not sold at higher prices anywhere.

The Company was indeed dissolved by a Federal Court in 1912; which ordered that the shares of all its constituent companies should be divided among its shareholders in proportion to their holdings in it. But nine strong men hold

¹ It showed great foresight, and was quick "to buy up lands along the route which a rival line was to follow, or to secure rights of way of its own access across such routes,...or to enlist the support of railroads in refusing to a rival rights of way across its tracks" (*Report of the Bureau of Corporations on the Petroleum Industry*, 1907, vol. i. pp. 21, 24, 25). The State of New Jersey has attracted undertakings desiring to evade the laws, which many other States have made for the protection of the public: and registration in that State has helped the Standard Oil Company in restricting facilities to others for use of the rights, which they might have demanded from its pipe lines, as "common carriers" (see the same *Report*, vol. i. chs. v, vi: and vol. ii. chs. x-xii, summarized on p. 668).

² See above, p. 435 fn.

III, viii, 3. between them most of these new shares; and, if they continue to work together, the policy of all the constituent companies may remain as before. Probably cautious counsels will prevail, at least for a time: and when those nine men pass away, the dissolution of the Company, which is at present merely nominal, may become real¹.

3- Monopolistic control in the tobacco industry effects great economies in marketing: the huge profits of the Tobacco trust tempted it, and enabled it, to use strong measures for the suppression of interlopers.

The tobacco industry has no high technique which calls for the ceaseless energies of a multitude of inventors: but each manufacturing business spends much on pressing its products on the notice of retailers and of the public. For these and other reasons, many statesmen have thought that a Governmental monopoly of tobacco could be more easily and successfully worked than any other: and that it could be made to yield a higher net revenue than could be got from customs and excise duties on it; at all events in countries with land frontiers over which petty smuggling of tobacco cannot be completely stopped. Such monopolies have not been very successful; because their task is really more difficult than it seems: and Government officials have not the energy, the alertness, and the special faculties of fine discernment, which have enabled the managers of the American Tobacco Company to amass vast wealth, from a partial monopoly of tobacco obtained by able management and strategic marketing².

Many giant businesses have owed their first successes to the possession of important patents; and, in spite of its simple technique, the tobacco industry has offered some scope for patents. In 1884, when cigarettes were coming into general

¹ W. H. Vanderbilt, a man of like mental structure with them, but of more purely constructive purpose, said of them:—"I never came in contact with any class of men as smart as they are....I don't believe that, by any legislative enactment or anything else, you can keep such men down. They will be on the top all the time." Quoted by Miss Tarbell, *History of the Standard Oil Company*, Appendix 59.

² An instructive study of the causes of the small measure of success attained by Government tobacco monopolies is given by Madsden, *The State as a manufacturer and trader*.

favour, a cigarette machine was produced which multiplied III, VIII, 3.
 fifty-fold the output of an operative. Successive improvements on that machine set up strong competition among the leading American manufacturers for important patents; and by 1890 nearly the whole of the trade in cigarettes was in the hands of five firms; each of which spent lavishly on advertisements till 1900, when they amalgamated. The new trust extended its operations into other branches of the tobacco business: it adopted the ordinary evil devices of bogus independent companies and "fighting brands"; and by 1910 it had acquired four-fifths of the whole tobacco trade, cigars alone excepted. Its expenses were relatively low in buying, in advertising and in premiums to middlemen; and "its rates of profit were ordinarily more than double those of its competitors¹."

It should be added that the Supreme Court dissolved the trust in 1911; and divided up its property and business among seven "successor" companies. The securities of these companies continued to be held chiefly by those who had held the securities of the trust; as had happened when the Oil trust was dissolved. But the sequel has been different. The successor tobacco companies compete with one another in considerable measure: and they spend more on advertising in various forms, and on other expenses of marketing than the trust needed to do. Therefore their net profits are less in the aggregate than

¹ *Report of the Bureau of Corporations on the tobacco industry*, Part III, 1915, p. 3. The leading firm in the amalgamation "was valued at \$250,000 in 1885. Without other additions than surplus earnings the par value of the securities to the end of 1908 amounted to nearly \$39,000,000; or 156 times the capital value of the business in 1885....These enormous profits...rest upon the monopolistic advantages obtained in this industry through concentration of control" (*Ib.* Part II, 1911, p. 38). It is well known that the American Tobacco Company's invasion of the British market led to the amalgamation in 1901 of thirteen of the largest British tobacco businesses, under the name of "The Imperial Tobacco Company"; that the two trusts fought hard for a year, then came to a working agreement, and finally set up the British-American Tobacco Company to export to countries other than Britain and America. In 1902 the British Company had offered large bonuses to dealers who undertook not to sell American goods for a term of years. The American Company replied by an arrangement that all profits on American sales in Britain, together with £200,000 for each of four years would be distributed to their customers, without requiring a boycott of other manufacturers (*Ib.* Part I, pp. 169; and 469, 470). These figures suggest the need that may arise even in Britain for the authoritative defence of independent producers against monopolists.

III, VIII, 4. were those of the trust, and from their point of view there is great waste. From the public point of view there is some waste: but the diversion of profits from the owners of the trust to middlemen, is not so much to be regretted as it would be in the case of an industry, the leadership of which calls for inventive and constructive ability of the highest order in almost unlimited quantities: on the whole, the dissolution of this trust seems to have been a gain. We now pass to problems similar to those raised by Deferred rebates in the shipping industry.

4. *Insistence on exclusive dealing, and other tying contracts, are generally harmless on a small scale: but, when used as aids towards monopoly, they may be mischievous.*

The Tobacco Trust at one time refused to supply any dealer who handled competitive goods. Regular dealers seldom saw their way to abandon the whole of its products in favour of a relatively small producer; even though he offered a few things, which had great attractions to consumers and promised high rates of profit to dealers. Partly because rival tobacco could be retailed as an adjunct to various businesses, the trust did not push this expedient very far: but the International Harvester Company even insisted on the dealer's keeping in stock a "full line" of all the company's machines suitable to his business¹.

Similarly the Electric Supply Company refused to sell those of its products, on which patents still ran, to anyone who did not buy exclusively from it other products, the patents on which had expired. Complaints against similar action by patentees of machinery for use in the boot and shoe industries have been numerous in America; and more recently in Britain.

The conditions of British industries seldom call for strong authoritative intervention in such matters: but they have attracted much attention in Canada and Australia. Even in Britain an Act of 1907 prohibits conditions, which prevent any-

¹ See the *Report* on it by the Bureau of Corporations, 1913, pp. 304-10. *The Economist* of 7 September, 1913, reports that it has recently been dissolved by the Supreme Court, on the ground that it was so large as to make the restriction of competition direct and substantial. This decision, being independent of any proof of actual exercise of the power of restriction, may have far-reaching consequences.

one, who obtains or leases a patented thing, from using any article supplied by a third person. This law can be enforced easily; though the larger undertakings involved in the American laws of 1914 could not be thoroughly enforced without the aid of a strong permanent Bureau or Commission to search out the facts needed to decide whether any exclusive, or "tying," contract tends "substantially to lessen competition or to create a monopoly"; and thus to set out a case on which a law-court can pass judgment. For the question at issue is not whether the actions to be restrained are wrong in themselves; but whether they are "unfair" methods of competition when used by powerful capitalists for the destruction of weaker rivals¹.

Unfair competition in this technical sense is not to be classed with criminal practices. But the feverish pursuit of wealth may induce men, capable of great work, to drift into distinctly criminal courses².

5. *Difficulties in the way of forecasting the future of trusts; especially in regard to their influence on the stability of industry and trade.*

The future of an individual life can be in great measure predicted from an observation of its earlier stages; because human nature is relatively constant and our knowledge of it has been accumulated through many centuries. But the future of an economic tendency is more difficult of prediction; because it will be governed by conditions which have not yet

¹ Speaking generally any vessel may steam down a river at such a rate as is convenient to itself. But if big ships, in competition with small craft, are charged with raising a high wash on purpose to injure their rivals, questions are suggested, which cannot be decided without technical guidance.

Attention is called to the British Act of 1907 in an excellent compendium relating to *Trust laws and unfair competition*, published by the Bureau of Corporations, 1915.

² The National Cash Register Company, whose technical achievements are in the first rank, has been convicted for malicious libels in regard to competitors; and for causing its agents to injure internal parts of rival machines when in actual use, and similar practices. In such cases the Bureau of Corporations has rendered good service in obtaining evidence which could not be got without great expense by the relatively impecunious competitors of the trust. If the trust had believed that those machines were not worth the prices charged for them, it would not have cared to injure them secretly. More details on this point will be found in Seager's *Principles of Economics*.

III, VIII, 5. come into sight: certain influences, which are likely to take part in governing the future of trusts, may however be observed.

Note has already been made of the dependence of trusts on a supply of business ability of so high and rare an order, that very few men of any one generation, even in America, have given evidence of possessing it. There may have been a considerable number, who have possessed it, but have not had access to positions in which it might be turned to account. The opportunities for such men are no doubt increasing in some directions: but in others they are being contracted; and the growth of trusts is likely to prove hostile to them. The momentum of a huge business, imparted to it by men of high creative genius, will carry it a considerable way: for routine, well set up, and supplemented by technical studies may give fairly good results under the guidance of men of high ability, even if lacking creative genius: and the supply of such men is not likely ever to run short. But the vaster a business, the greater is the danger that it will be dominated by routine when the men of energy and genius, who made it, have passed away¹.

It may indeed be urged that any tendency towards quiescence, that may be shown by an old trust, is not without compensating advantages from the public point of view; partly because it makes in some degree for the stability of industry. Again stress is laid on the facts that the recent advances of technique have gone so far as to insure to mankind a mighty command over the forces of Nature, even though technical progress should slacken a little: and that progress depends increasingly on professional students with eyes turned partly towards concrete results; as well as on those employed by great businesses to work on laboratory lines for the solution of definite practical problems. It is argued that enlightened heads of a great trust, even if somewhat inert themselves, are likely in the coming age to devote corporate funds without stint to such purposes: and thus constructive work will proceed. Meanwhile intimate

¹ When a great combination is effected "initial success is due to the ability and prestige of the leaders. As time goes on new leaders must be found. But nepotism is likely to appear in the established management" (Tausig, *Principles of Economics*, ch. 83, § 4). Several other authorities have laid stress on the dangers which old trusts are likely to run from nepotism.

comparisons of the work of similar establishments in the same trust will aid the departmental managers, as well as the central control, to turn to good account any zeal for progress that they may possess; and national and international congresses of technical experts will tend in the same direction. All this may be true: and yet it seems probable that the total constructive activities of the nation will be neither as vigorous nor as freely exercised, as they would have been if nearly every establishment, large enough to avail itself of the full economies of massive production, had been under independent control.

Again it is true that the economies in marketing, belonging to a trust with almost undisputed sway, make net contributions to aggregate national wealth; the importance of which is not to be entirely ignored, merely on the ground that they fall chiefly to the share of those who are already rich. Moreover a trust, whose dominion is not threatened, generally promotes steadiness both of output and prices, so far as it conveniently can. For it is inclined to that policy by the magnitude of its investments; by the broad interests, which its chief proprietors commonly have in the stability of general business; and by that relative immobility which attaches to its gigantic organization. Accordingly no small motive suffices to set it on sudden change: and for the same reasons, it is at once more inclined, and more able, to oppose any assault on its dominion by violent measures, which convulse its own industry and disturb many others: though of course, even when the dominion of a particular trust is not threatened, command of its securities may be abused in a stock-exchange campaign, in which some of its chief proprietors hope to gain more by the furtherance of great strategic schemes, than they can lose by a temporary depreciation in the value of their holdings of that trust¹.

¹ A striking instance is that of the Amalgamated Copper Company; which is commonly called a trust, though it had no monopoly. The guarded account of it given by the Industrial Commission (*Final Report*, 1902, pp. 230—5), contrasts with the vehement statements and suggestions collected from newspapers of an earlier date in Moody's *The truth about the trusts* (pp. 1—42): and with the still more penetrating and outspoken account in T. W. Lawson's *Frenzied Finance*. Even with the aid of the Federal Trade Commission, a long time must elapse before the history of such scandals is sufficiently certain to

II, VIII, 6
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There is therefore no reason for surprise in the fact that several studies of the history of trusts claim to show that they make for increased stability in the general conditions of industry and trade. So great have been the changes in the structure of industry, and in the control of monopolistic power by State agencies, in the two decades over which the effective history of trusts extends, that the past gives but little guidance even as to the near future: but a little may be said about it¹.

6. A great part of the railways and the chief manufacturing and mining businesses of America are largely under the control, for good and evil, of a comparatively small number of powerful financiers.

The influences of interlocking directorates within the field of American railways were noted at the end of Chapter VI. Many

afford the basis for definite general conclusions. The Industrial Commission truly said that "when the great supplies of nature come under the operation of gigantic forces, in adapting them to the uses of man, the best good of all legitimate interests requires publicity of resources and methods, and such Governmental supervision as may tend to preserve an equilibrium, and prevent demoralization and disaster." It may be added that the famous French "Secretain" attempt to manipulate the price of copper, late in last century, belongs not to the history of trusts, but to that of giant speculation in organized markets: a good account of it is given by M. Jannet, *Le capital, le speculation et la finance au XIX siècle*, pp. 320—331.

¹ The period investigated by the Industrial Commission, chiefly 1830—1900, included some changes of an almost convulsive character: they were connected chiefly with the suppression of pools, of trusts of the old kind, and of controlling companies; together with the general prominence of simple giant aggregations. An indirect effect of that prominence was a great increase in the quantity of stock-exchange securities that had a national, and even an international market: for where a small corporation was absorbed in a great trust, its property became at once part of a concern, whose affairs were recorded in central price lists. Many of the new trusts had not then "been tested by a period of depression with the consequent liquidation and reorganization"; and "the methods of conducting the business of industrials are more secret than those in the management of railroads." This remark is taken from a special report on "securities of industrial combinations and railroads" under the able direction of Professors Jenks and Kemmerer (*Report of the Commission*, vol. XIII, p. 917). It sets out a number of statistical charts representing stock-exchange histories of many trusts and several railroads. The charts support the common opinion that up to 1900, at all events, trusts exercised a distinctly disturbing influence on the general courses of business. But subsequent history lends more support to the notion that, for good and for evil, the influence of trusts in the future will make for quiescence rather than for strenuous movement.

great organizers of railways have accumulated fortunes, which have overflowed into the general funds of the stock-exchange. The Standard Oil group controls several banks; and it has a dominating influence on many railways and industrial trusts. And the great financial houses, with that of Morgan at their head, hold a very large part of those securities, which carry effective voting power over leading railroads, trusts, and other large businesses. Insurance companies, and others, which hold securities giving voting power, are used by financial magnates to serve the purpose of financial campaigns. A committee of the House of Representatives, 1913, found by a majority that in effect there existed a "Money Trust"; not indeed consolidated, but held together by mutual understandings and communities of interest. Their conclusion has not met with general assent: but there is cause for thought in the fact that they reached it¹. III, VIII, 6.

This predominance in American business of a few scores of wealthy men, themselves largely under the influence of a small number of powerful individuals or groups, has modified the attitude of trusts and other great businesses to one another; and has tended on the whole towards increased quiescence and serenity in the broad courses of industry and trade. For a disturbance in any part of the whole field is likely to injure interests in which some of the chief leaders are concerned; and such men are often disinclined by age and the multitude of their large concerns for entering on arduous campaigns. The irruption of an ambitious genius of the first order, such as Harriman, may disturb the quiet at any time: but the general tendency is towards broad pacific understandings; similar to those of narrower scope, which preceded the pools of earlier times, and have survived them. Thus the wastes of furious competition, and the strain of anxiety lest some unexpected move should largely falsify business expectations, have become less than formerly.

¹ A broad view of the alliances of the chief financial powers in America in 1904 is given by Moody, *The truth about the trusts*, pp. 490—493, and frontispiece. The failure of the great International Mercantile Marine Company, organized by Mr Pierpont Morgan, illustrates the risk that even a great genius runs, when he makes a large venture in a difficult field, of which he has no intimate knowledge.

III, VIII, 6. This gain has however been purchased at a heavy price. The defences of public interests in America against monopoly have rested, partly on the growing efficiency of authoritative regulation, but still more on the growing abundance of free capital. Advocates of the trusts were themselves prominent in the contention, that if a conditional monopoly put its prices above the levels at which a well equipped independent company could afford to produce, the capital required for such a company would be quickly provided. But the growing harmony among the dominating financial interests has raised a fear that the grip of monopoly will be tightened steadily, though quietly; and that the camaraderie among the great financial powers will put effective, but unobtrusive, obstacles in the way of any new enterprise that threatens an unwelcome intrusion into the dominion of any of the great financial groups. This fear has so impressed Congress that the 1914 (Clayton) Anti-trust Act includes several stringent provisions against interlocking directorates generally; with special reference to direct alliances among banks, and between railroads and other businesses. Experience only can show whether these regulations can be made effective without considerable hurt to legitimate interests; though it is true that initiation of proceedings under the Act will be reserved in the main for Boards, who will bring an exceptional expert knowledge to the matter. They will know what not to do, as well as what to do: and they will be able to furnish any Court, with which a decision may rest, with technical guidance of the highest order¹.

¹ Section 8 of the Clayton Act provides (with due notice) that no one shall be at the same time director in more than one company (other than financial or carrying) whose total capital exceeds a million dollars. It also makes a similar provision as regards banks; but the limit of capital is raised from one to five million dollars: "trust companies," which accept deposits of securities belonging to various concerns, and pool the dividends, so as to reduce the risks on particular holdings, are reckoned with banks. Section 10 prohibits a carrier company from interlocking directorates with any business whose annual dealings with it exceed fifty thousand dollars. And Section 7 provides that no corporation engaged in commerce shall hold or use stock of another such corporation in such a way as "to restrain commerce...or tend to create a monopoly." Their several rôles in regard to these regulations are assigned to the Federal Trade Commission, the Interstate Commerce Commission, and the Federal Reserve Board.

Britain has so far escaped the necessity of making provision of a like elaboration.

It will be noted that these regulations, though contained in an Anti-trust law, are really directed against tendencies, which extend beyond the sphere of monopolistic aggregations and spread over a large part of the field of financial and other understandings and associations. We are thus brought to those problems in which the chief place belongs to Germany, as that of monopolistic aggregations belongs to America. It will be found that each of these two apparently diverse sets of problems is moving in the direction of the other.

The central fact emerging from American experience is that investigations in regard to antisocial policies of trusts and cartels can be efficiently made only by a strong staff of men who give their whole time to the work. In such work there is but little use for the special faculties of the lawyer. He has an important rôle to play; but it comes at a late stage, and consists in securing that legal rights and equities are duly observed. Of course the initiative might be taken by individuals who conceive themselves to be aggrieved; but they seldom have the time, the faculties or the knowledge required for the work. They are apt to lay undue stress on matters which specially concern them, and to pass by the larger issues which are of national concern: and they are often afraid to attack powerful interests, whose hostility might destroy them.

kind: but Canada has gone a little way in the same direction. As already observed (above, pp. 522, 523 *fn.*) she has arranged that, on the initiative of any six persons, suggesting the existence of a combination injurious to the public, there shall be appointed a Board of Investigation, consisting of one of the complainants, a representative of the combination and an independent chairman. This simple contrivance may be of good service in regard to elementary difficulties. But it aims mainly at finding a reasonable compromise in contentions between individuals: and would be of but little use in the defence of public interest against powerful assaults by obscure routes, such as those which occupy the attention of the Federal Commission. In this respect, Britain's industrial problems are more nearly akin to those of the United States than to those of Canada.

CHAPTER IX

TRUSTS AND CARTELS: GERMAN EXPERIENCE

III, ix, 1. 1. *Germany's leadership in the evolution of cartels.*

Mediaeval guilds devoted much of their energies to the regulation of production and prices: but for the greater part their origin was in social affinities rather than in the strategy of the market-place; and the same is true of many modern combinations. In all old countries, and especially in Germany, professional, trade, and industrial associations found much to do in making life more pleasant, and business transactions more simple and more genial, before they set themselves elaborately to bring competition under the yoke, to regulate it, and to diminish its wastes¹.

It was noted in Book I that, though the industrial civilization of Germany is of much earlier origin than that of England, yet several centuries of war and internal discord had stripped

¹ The various stages of this evolution are shown in the *Handbuch der Wirtschaftskunde Deutschlands*, edited by Dr Stegemann, 1904, vol. iv. pp. 474—730. The section on *Kartelle und Konventionen* is part of an exhaustive chapter on *Organisation und Einrichtungen der Industrie*.

Prof. Schmoller (*Volkswirtschaftslehre*, vol. I. p. 449) says that from 1750 to 1870 men saw only the bad side of associations, "which had their origin in older technical, social, and commercial conditions; and hindered rising talents from building new enterprises on a larger scale and with more complete technique." Men quickly learnt that businesses of modern type were bound to conquer; and "the last word of economic wisdom seemed to be that competition should be developed; and that every combination of traders and of producers should be restrained or prohibited." But in Germany since 1879 a movement set in for the promotion of gild-like combinations (*Innungverbänden*) in provincial and national affairs: and similar combinations were set up in the great industries, with local and central organizations with their "general secretaries; chief offices; special newspapers, tending to influence the press, Chambers of Commerce, Parliaments and Governments; and great public meetings."

her bare of capital and enterprise: so that the impact of English methods in the middle of last century gave her a shock comparable to that of a new country, which is being suddenly developed by immigrants from a leading centre of industry. But in the first half of that century her universities had developed a supply of mental motor force, which enabled her to turn the lessons of her teacher to a new account, and thus fitted her people for a new type of leadership. Hardship had prepared them to work steadfastly for relatively low earnings: and discipline, both military and bureaucratic, had inclined them to rate the advantages of a secure salary very high, and to rate rather low those of opportunities for independent enterprise of a somewhat hazardous nature; while the tedium of long meetings for the discussion of other people's affairs is less burdensome to them than to the impatient Anglo-Saxon.

Above all, their business men of various grades work longer hours than are usual in Britain. Many of them take a long break in the middle of the day; and then work on till eight in the evening with more fully renewed vigour than is generally to be got by the short break, common in Britain. Their plan has many disadvantages especially in regard to the amenities of family life: but it contributes to the force of assiduity.

Endowed with these qualities, they have developed large organization with such a perfection of detail and so logical a consistency, that the record of German cartels will make a classical chapter in economic history; even though they may fail to attain their chief objects, and may give place to an ordered system of aggregations similar to that which is being evolved in America: a result which is perhaps not improbable.

In this, as in other matters, national character and national institutions have acted and reacted on each other. American impatience of routine (abetted indeed by the jealousy with which individual States regarded Federal intrusion in their affairs) had caused American Company Laws to be inefficient and chaotic: and some troubles which have led up to the stringent American action against the abuses of trusts, would have been stopped by the Company Law of Britain. The yet more stringent German Company Law gave some feeling of security amid the tumultuous movements of cartels and giant

III, ix, 1. businesses: it has not been fully justified by events; but it has promoted the evolution of German business on lines congenial to the temper of her people.

The steadfastness, patience, and amenity to discipline of the Germans inclined them to seek the sheltered haven of a cartel, in spite of the partial loss of freedom, and the troublesome negotiations involved in it: but they might not have rushed quickly to that haven, if the methods and circumstances of industry had continued to move with as slow and measured steps, as they had done during the first half, and even the third quarter of last century. The sudden uprising of German business from relative quiescence to the strenuous activity, which had belonged chiefly to English-speaking peoples, introduced a new sense of insecurity: and that in turn enhanced the charms of a promise of even partial shelter from the turmoil¹.

The scale of operations rapidly increased. But every new expansion of cartel activity opened out new difficulties and new troubles. Some interests were advanced, and some depressed, by every large development: and the stronger the cartels became, the louder and more eager were the complaints of those who were injured by them, or even feared that they might be injured. So, early in this century, the German Government took the matter in hand: and in 1903 an official debate was commenced, which is sometimes described as the *Kartellen-Enquête*. It was organized by the Ministry of the Interior; which sent to each debate representatives of its own: and invited some representatives of the cartel or cartels, whose conduct was chiefly under discussion, and of businesses that were specially affected by it. It invited also several leading economists, who addressed themselves, for the greater part, to questions connected with the interests of the working classes and the public generally.

¹ Consul-General Oppenheimer of Frankfort, subsequently British Commercial Attaché at Berlin, has sent a series of reports on German conditions which are specially instructive to the economist. He says (*Report for 1904*, p. 64) that it "has been officially recognized in the Prussian Diet that commercial combinations had become an economic necessity of self-defence, because industry was being ruined by its own exaggerated competition: for with the keenness of a comparatively young industry, orders, even if practically unprofitable, were accepted all over Germany to swell the figures of the turnover of the individual firm."

The debates seem to have been organized with remarkable ability, and they brought out a good deal of useful information: but they are not comparable in efficiency with the prolonged, systematic study by trained experts, armed with compulsory powers of interrogation and inspection of documents, which has brought to light many of the secret policies of American trusts. No one gave any information which he desired to withhold: not all, that was given in debate, was published: the debates were inconclusive; and they ceased abruptly¹. III, ix, 2.

2. *Cartels, whose scope is limited to the regulation of prices in regard to standardized products.*

Before passing to the more complex policies of cartels which aspire to regulate production as a means towards influencing prices, a little may be said of those understandings and combinations among traders, which are confined to the direct regulation of prices: the simplest instances of these are in retail trade. A giant business often enforces a fixed schedule of prices for its goods on wholesale dealers; and indirectly, if not directly, on retail dealers. Or the initiative against the retail sale of such goods at a low rate of profit may come from the retailers. They in effect form themselves into a cartel, and will buy only of such producers as will not allow their goods to be sold retail below the price fixed by the cartel. This practice if pursued in moderation is capable of defence; as has been indirectly suggested above: but when carried to excess it may overload a

¹ The official report of them is published under the title *Kontraktorsische Verhandlungen über Deutsche Kartelle*. A brief abstract of such parts of them as relate to export bounties by cartels is given in the so-called "Fiscal Blue Books" of 1903—4; [Cd. 1761] and [Cd. 2337].

When the debates opened, the chief expert representative of the Ministry of the Interior was Dr Vöelker: a man of great ability and so much special knowledge, that the cartels seem to have regarded him as properly belonging to them. In the middle of the great debate on steel cartels, which forms the centre of the whole discussion, he changed sides. In the first half of that debate he appears as the representative of the Government; but in the second he appears as director of the mighty Steel-works-union (*Stahlwerkerband*); and a little later he gave a tart reply to Professor Wagner's suggestion that it might possibly be necessary to "apply a certain compulsion to speak out, as in England" (*Kontraktorsische Verhandlungen*, vol. iv. pp. 252—4).

III, ix, 2. retail trade with more retail stores than can earn good profits on each turnover, since that has been brought low¹.

It were useless to try to regulate permanently the prices of harvest products, such as wheat or cotton: for Nature will have her own way as to the chief movements of such prices. It is true that combined action by farmers in keeping back grain after harvest may affect prices a little; and such movements may conceivably become rather more important in the future. Again, a temporary artificial rise may be effected by powerful speculators: but, as we saw (above, II, v), they are almost sure to lose in the long run; unless the rise is based on exceptional information as to harvests, etc. and merely anticipates a rise which would have come to pass a little later without their efforts. Speaking generally, far-reaching regulative combinations are confined to things, the production of which is mainly in the hands of capitalist undertakers, and is not violently disturbed by the caprice of Nature.

And there is a further limitation of the scope of regulative associations. The things, of which the prices are to be regulated, must be defined. This is generally done by the use of technical trade terms: but at the back of these there is an implicit reference list to some standardization by mechanical, chemical, or other tests. The prices definitely agreed on from time to time may refer primarily to certain prominent varieties, leaving the prices of other varieties of the same kind to be deduced from these standard prices by adding or subtracting a given percentage².

¹ See above, pp. 280 and 300.

² As Prof. Brentano says: "Cartels can exist only in branches of production which supply great quantities of goods of fixed types; *res, quae pondere, numero, mensurâ consistunt*" (*Süddeutsche Monatshefte*, April, 1904, p. 259).

It may however be arranged that goods bearing certain brands in great repute shall be priced somewhat higher than others; or again that goods, which are nominally of the standard class, but are in fact less desirable, should be priced rather low. For instance, it is possible to agree as to the minimum first class cabin fares between two ports, for ships offering the average of personal comfort and speed of journey; and to allow specially slow lines to carry nominally first class passengers at lower fares. Again, complex price-lists can be fixed for different varieties of steel girders and iron pipes. The Westphalian Coal Syndicate publishes price-lists for several sorts and qualities of coal; and, in spite of this classification, purchasers show preferences for particular mines, in which they believe that the general rules as to uniformity of size and freedom from dirt are carefully observed.

It is almost impossible to arrange a uniform price-list for carpets or curtain stuffs into which wool of different qualities, cotton, jute, and other materials are worked in varying proportions and with incessant changes in fabric as well as in pattern. There is no room for cartellization of such things as biscuits, or ladies' hats, in which versatility is demanded as well as high quality. III, ix, 2.

Of course nearly all standardized commodities are raw materials or half-finished products, or implements, suitable for purchase by people who look to make a profit by turning them to account in their own business; and who therefore are likely to meet the danger of oppressive action on the part of a combination, in control of things which they need to buy, by a counter-federation of their own. That is apt in its turn to stimulate the growth of similar federations on the part of traders or producers who need to buy some of their products; and so on till the end of the chain that stretches upward to the ultimate consumer, and downward to the producer of raw material: the chain reaches far in the steel industries¹.

The conditions, which favour standardization, are nearly the same as those, which increase the violence of unregulated competition, and thus supply a strong motive force in favour of regulation: for they involve generally the use of elaborate and expensive plants and therefore heavy fixed expenses, and therefore a great divergence between total cost of production and prime cost. When these conditions are present, some self-willed producers and reckless weak producers are tempted to pour their goods on the market, even when it will absorb no more except at a very low price. This fact increases at once the difficulties of price regulation by cartels and the desire of many producers for it.

¹ According to an official return (see Riesser, *The great German Banks*, p. 169), there were in 1905 about 385 domestic cartels, distributed thus: coal 19; iron 62; other metals 11; chemicals 46; textiles 31; bricks 132; earth and stone 25; food 17; the rest being scattered: about 12,000 works participated directly in these concerns. It is obvious that the number of cartels in an industry is not a measure of the total strength of the cartel movement: the brick-making industry for instance owes its large number mainly to the fact that the interest of each of them extends only over a small area. The number of cartels seems to have increased in the following decade.

III, ix, 2. Some of the most important cartels have indeed been in mineral industries: for mineral products are, as a rule, easily standardized; and combination is generally easy, because large capital is needed for each mine, and the number of firms which must be brought together in order to make an effective combination is not very great¹.

Experience shows that whenever discipline has to be called to the aid of honourable understanding at all, it must be thorough. For its task is difficult. The more successful a cartel is in obtaining better prices for the producer than he could get without it, the stronger is the inducement to outsiders to force their way into its market; and the stronger is the temptation to its members to evade their agreement, and attract more than their share of the custom by indirect concessions².

¹ This rule is subject to some important exceptions. When a new mining industry grows up spontaneously and without the aid of imported capital, shallow veins alone are worked; shafts are inexpensive, and there is no great economy in large production. But, when the shafts become deep, only large mines can give a good return. Further, when it becomes clear to the capitalist mineowners of a great industrial district that new and more distant mines must be opened up, they take time by the forelock and buy large areas of mineral property while land is still to be had cheaply. Thus the approaching exhaustion of the coal in the Ruhr basin has set wealthy ironmasters to develop the basin of the Lippe: and this migration of coal mining has added another to the many causes that are putting the heavy iron industries of Germany under the control of a few great capitalists.

² The Outsiders get the benefit of high prices fixed by the cartel, making use perhaps of some of the workers whom members of the cartel have been forced to discharge: and therefore the cartel has seldom much chance of success unless it controls from sixty to ninety per cent. of the production in its district. The devices, by which a member of the association can evade a mere rule as to prices, are numerous. Perhaps he takes a receipt for the full official price, though in fact he has accepted a lower one. Or he bills the goods as being of a lower quality or less in quantity than they really are: or, which is much the same thing, he makes no charge at all for certain consignments; or he renders extra services without being paid for them; or he gives long credit, and that to customers whose position is dubious. Rumour is sure to assert that such things are done, whether they are or not: and the rumour often brings about its own accomplishment. A pushing buyer plays off one seller against another, hinting to each that others are not strictly true to the agreement. For instance a business, which had sent a great deal of freight by each of two American railroads, has been known suddenly to give all to one of them, in order to make the other believe that it has just secured secret rebates from the charges agreed upon between the two lines, though in fact it has received none. Thus it obtained rebates from the second line, which thought itself betrayed.

We may pass by simple agreements as to division of territory, for they presuppose considerable monopolistic power; and though they have had some success in transport industries and a few others, their problems are not germane to this chapter¹. III, ix, 2.

An effective lasting control of price at an unnatural level does not seem to have been ever obtained by a cartel or other federation, unless provision has been made for determining how much of the products, in which all are interested, shall be put on the market at any time; and how much of this total shall be allotted to each member of the combination as his quota.

This provision has been developed with many varieties of detail. In some cases each member is allowed to exceed his quota on paying a proportionate *finé* to the common fund. He is generally allowed to produce as much as he likes, in addition to his quota, for sale in foreign countries; and in some cases in such home markets as are beyond the range of the combination. Such an agreement is more difficult to make than one with regard to prices; but provided it embraces most of the convenient sources of supply, it is rather more stable; because it does not offer so large scope for evasions. Its advantages are so great, that it is becoming the dominant form of industrial federation in Germany: though time has revealed weak points in it; some of the most important of them being such as were not foreseen, and perhaps could not easily have been foreseen. It was brought far towards its present masterful position by the Westphalian coke cartel; but a good deal remained to be done by the great Westphalian coal cartel, which speedily adopted and improved it, thus becoming what is technically called a "Syndicate." We may trace the orderly evolution of the methods of German cartels by reference to this leading cartel, and some of its chief followers.

¹ Each producer is likely to consider his legitimate sphere of influence to be very extensive: and he can often trespass on his neighbours' spheres by indirect means. Again, external competition causes trouble: the interest, that each man has in meeting it, varies with the locality in which it chiefly appears; and there are heartburnings, whether the expense of the battle is left to those who are more immediately interested, or is borne by a common fund.

International agreements for the division of the markets of the world among the producers of different countries have had some success, especially in regard to steel rails; they presuppose the existence of strong national associations

- III, 12, 3. 3. *The Westphalian coal cartel, or Syndicate, affords the leading instance of an organized control of the output and marketing, as well as of the prices, of the products of a great industry. Its policy has contributed to the growth of "mixed" coal and steel companies at the expense of "pure" coal mines and steel works.*

The Westphalian coal cartel is the most powerful in the world: (the next in power to it is the Steel-works cartel; which is its chief ally and has an even larger range of influence, but is not so firmly knit, as we shall see). It has always been considered to be "good" in the special sense that it strives strenuously to avoid violent fluctuations of prices; and does not sacrifice this aim to that of raising them high above cost of production. Its organization is skilful. Supreme power rests with the general assembly of its members, with voting powers roughly proportional to their output. The general assembly keeps matters of principle in its own hands: but it delegates the arrangements of details to an Advisory Council and an Executive Committee: and it arranges that the majority of the members of the sub-committees, who decide thorny questions connected with the distribution of quotas, shall not be members of its own body. It may be well to describe its working in general terms, since its leadership has been followed so far as practicable by other cartels, which have set up Syndicates. It will be best to refer to them here as Syndicates.

Every purchaser must apply to the Bureau of the Syndicate. In some cases he may specify the producer, or "brand," which he prefers; and that producer is directed to forward the goods to him, payment being received by the Bureau. But, as a rule the source of supply is selected by the Bureau; which takes account of the suitability of each firm for an order, of the extent to which its quota is still not filled up, and of its geographical position relatively to the purchaser. This plan secures a little technical economy, and great economy in advertising and hunting for orders, and in transport. It enables the Syndicate to keep a control over the output and the marketing, so thorough as often to constitute a local monopoly: for it is able to inflict serious losses on any outsider that ventures into its domain.

The Bureau can sell cheaply where it thinks fit; for the firm which fills up any particular order has no more interest in the price than any other member: the whole receipts of the Syndicate, after deducting outlay for strategic and administrative purposes, are divided among the members in proportion to their authorized production. Thus each firm retains for itself the gains arising from the economy and efficiency of its management, except as regards marketing¹.

If the concentration of marketing could be attained by methods that are free from cumbrous negotiations and effort, it would be a great social gain: for marketing is not wholly constructive work; and, the less energy is devoted to it, the better for general well-being. But the machinery of a Syndicate is complex: and it is said that a producer, who desires to be relieved of the main burden of marketing, can often get it done more cheaply by dealers than by a Syndicate; at all events if account is taken of the indirect hindrances which Syndicate dealings involve. Also, those things, which a Syndicate can market, are necessarily such as are in large demand and to some extent standardized; and therefore they are rather easily marketed. But, after all deductions under these heads have been made, something must be set to the credit of cartels, on account of their elimination of wastes in the competition between goods of somewhat similar character, which the purchaser cannot judge at sight: the wastes in the marketing of coal for domestic use in England are deplorable. A much larger deduction must be made on account of the tendency, inherent in human nature, to apply to antisocial uses any power of control, whether monopolistic or not, that had been acquired mainly for worthy purposes².

¹ For details, see Walker, *Combinations in the German Coal Industry*, Part III, ch. 1.

² Leaving larger matters for later discussion, instances may be given of small tyrannies. A site near coal mines (*A*) had been chosen for the erection of iron works (*B*): the supply of good coal at rather low price, on which reliance had been made, continued till *A* joined the coal Syndicate; after which *B* was supplied by the Syndicate with inferior coals at a higher price. Somewhat later the manager of *B* visited some Belgian works, and found that they were being supplied by the Syndicate with coals taken from *A*, and delivered at a price so much below the current German price, that the Belgian works gained

III, ix, 3. The coal cartel originally befriended steel works which had no coal of their own: for it compelled "mixed" steel works, as a condition of membership, to account to it for all the coal which they brought away from their mines: coal consumed in working the mines themselves is always exempt. This meant that such mixed works paid a full share of the expenses of the Syndicate on the coal used in their steel works: so that the steel works, which had no coal mines, obtained their coal about as cheaply as the mixed works did. But the mixed works rebelled: membership of the coal cartel was of little use to them because they seldom wanted to sell their coal: so they preferred to become, or remain, independent. After a time some of them began to sell coal in considerable quantities, especially when the steel trade was rather dull: and the technical advances, which enabled waste gases of blasting furnaces to be used for the whole of the operations of complex iron works, tended to increase the coal which mixed works could advantageously put on the market.

This result went so far towards defeating the chief purpose of the Syndicate, that it invited back the mixed works by allowing them the same privileges in regard to their own coal, when used in their steel works, as had always been allowed on that used in working the coal mines. This action of the Syndicate put the pure coal mines and the pure steel works at a disadvantage, in spite of their greater care in the management of details, relatively to the mixed works. So, instead of thwarting the cartel, the mixed works set themselves to dominate it and use it for their own purposes. They used the heat and power, derived from their waste gases, for making heavy products; some of which were sold ready for use. Others were sold to higher stage steel works at lower prices than those works could make them, after paying for the coal needed in making them; and a few were worked up on their own premises into fine finished products.

by selling to France the coal which it drew from its own coal mines and using only that from A. (*Oppenheimer's Report for 1905*, p. 33.)

Early in 1907 the Syndicate prepared itself to deliver brown coal briquettes: and then prohibited any of its customers from buying such briquettes from any other source under penalty of 50 pf. per ton on all supplies of coal, coke, and briquettes drawn from it. (*Oppenheimer's Report for 1906*, published in 1907, p. 51.)

It is true that similar changes were taking place on a vast scale in America, which was of about an equal age in this respect with Germany; and, on a smaller scale, in Britain. But the exceptional rapidity, with which the older and weaker firms were supplanted in Germany by giants, was in great measure due to the influence of the coal and other cartels. For the mixed businesses, growing fast, and aiming at yet faster growth, were prepared to pay relatively high prices in order to secure increased "participations," or "quotas," from each cartel, with which they were connected, when a new division was arranged; so they bought up coal mines wherever possible; especially such as were already members of the Syndicate, in order to annex their participations¹. III, ix, 3.

Thus an artificial stimulus was given to that flow of capital into the steel industry which would in any case have resulted from the notoriety of the power of its newly acquired technique. Ambitious men did not wait for the gradual expansion of demand that was to be expected from improved conditions; but enlarged their plant quickly in order to be able to claim larger quotas later on. Meanwhile the "pure" coal mines found that, though the market for coal was expanding fast, and the cartel was rapidly extending its sales, they were prevented from producing any more than before; because of the rapid increase in the quotas assigned to giant mixed works. That increase went so far, that the cartel was compelled to force largely increased sales abroad, at prices below those at which it entered the coal in its own accounts; thus causing a deficit in the accounts, which had to be covered by what was in effect a levy on all the works, including those whose output was thus forcibly restricted.

Henceforward the centre of interest passes from the coal cartel to steel cartels. But the coal cartel has a solid position; and it may possibly continue to have great power of a character similar to that which it has now, when the problems of steel

¹ Their right to do this was sustained by the law courts: though the cartel had denied it. Each member of the cartel used to be allowed to increase his participation by 1000 tons for each additional shaft sunk: but in 1904 that privilege was withdrawn: so recourse was had to buying mines that were weakly held.

III, ix, 4. cartels, which have been changing rapidly during recent years, may perhaps be very different from those of to-day: for its dominion over a large area is secured by the heavy cost of bringing coal from a distance. But an extreme use of its partial monopolistic power would lead to increased encroachments on its province by brown coal, the uses of which have made recent technical progress; by coal from other German sources; and, near the Rhine, Elbe and Weser, and the shores of the Baltic and North Sea, by British coal. Also the State owns the railways, whose services are essential to the Syndicate; and as they are also chief purchasers of its products, the State has exercised a considerable influence over its policy. Thus the cartel, in spite of its strength, has not had much opportunity for offence: and it has not desired to offend.

4. *Causes that specially favoured the advance of giant businesses in German steel industries: phases of their cartellization.*

Thirty years ago Germany's output of steel was not very great; but now it exceeds that of Britain in about the same ratio as her population does; though in a considerably less ratio than does her area, and consequently than the demand for it by her railways, bridges, etc. This advance has been sometimes attributed in large measure to the beneficial influences of her cartels and her trade policy. It is in fact less than it seems at first sight. For, speaking generally, her exports of steel products are of much lower value per ton than those of Britain; a notable exception being in her exports of electrical plant. Her exports of steel manufactures are much less per head of the population than are those of Britain: and Britain's imports of machinery come mainly not from her but from America¹. But such as it is the advance seems to be amply explained by four well-known

¹ Ships, among the highest grade products, are not counted in such statistics. Britain is the chief producer and the chief exporter of them. Germany imports more than three times as much of them as she exports: though her exports of steel include some sent by her to Holland to build vessels for German use. Those who advocate the Germanization of Britain's economic policies, habitually omit Britain's sales of ships; they compare the exports of the two countries as aggregates, and not per head of the population; and measure steel exports by weight and not by value; and thus obtain three illusory advantages in argument.

causes. The first is that superiority of German educational methods over British as a preparation for the work of modern III, ix, 4 business, of which much has already been said. The second is the fact that, while British supplies of ore have been rapidly dwindling and becoming more difficult of access, Germany obtained ever easier access to rich stores of iron ore in Lorraine, Luxemburg, and the adjacent territory of France¹. The third is that these ores, though not well adapted to older methods of steel production, are eminently adapted to methods invented by the Englishman, Thomas. The abundant phosphorus in these ores, is now turned to account in the production of heat, and of power which is available for the purposes not only of smelting works themselves, but of any rolling mills and other "higher stage" steel works that are associated with them.

The direct effect of this economy in promoting the expansion of German steel industries has been generally recognized: but insufficient attention has been given to its indirect effect in accelerating the suppression of obsolete plants: and this is the fourth cause. The proportion of up-to-date to antiquated plants is always greatest in an energetic and rich country, which has but recently found its way to utilize large natural resources. Many of the British steel plants which were at work before the German steel industry became prominent, were in the hands of men who had inherited the material, but not the intellectual resources of those who had set them up: and family traditions hindered the infusion of energetic new blood.

In Germany, on the other hand, the control of steel businesses, partly because they were new, was mainly in the hands of men, who had been nurtured in frugal habits, and expected to work for eight or ten hours a day, and for three hundred days in the year, very much as had those who created the British steel industry two generations earlier. And the direction of new supplies was in the hands of energetic financiers, some of whom were eminently endowed with the high Semitic faculty of going straight to the roots of large business problems.

¹ Of the iron ore production of the German Zollverein in 1911 nearly 18 million came from Alsace Lorraine, and 6 million from Luxemburg; but only 6 million from Old Germany.

III, ix, 4. The German banks have surpassed even those of America in the promptitude and energy with which they faced the risks of turning a large flow of capital into an enterprise, before men of less keen intellect had discovered that it is one of those to which the future belongs. The influence of the banks, acting partly in concert with cartels, has favoured giant businesses in the steel industry: and the supersession of small businesses by large has brought more economy and less indirect harm in the heavy steel industry than in any other, except that of transport.

We have seen how the coal cartel ultimately became the ally, or rather the servant of the strong; though its policy was always moderate and free from harshness: but the first great cartel in the steel industry, that for heavy "half finished" products—the *Halbzeug-Verband*—showed little mercy to pure rolling mills and other works that needed those products: and the "higher" cartels, which these mills formed among themselves, were even harsher in their treatment of makers of the still lighter steel goods who bought their products. In each stage of production men rejoiced that a cartel helped them to raise their prices against the home consumer, but each group craved a freer market in which to buy its material. The smelting furnaces could buy nearly everything that they needed, except coal, without any artificial rise in its price; and could sell at prices raised both by protective taxes and cartel manipulation. But other works, confined to a single stage or perhaps to two or three, had to strive on the one hand, to prevent tariff and cartel from pressing heavily against them when buying; and on the other, to get as much help as possible from tariff and cartel in their endeavour to sell at good prices in the home market. Complaints that the export prices of rails, girders etc. were lower than prices charged at home for the blocks from which they were made, were among the causes which prompted Professor Wagner in the official debate on cartels to suggest that "if the whole industry is gripped by cartels, trusts and giant businesses, then arises the final claim that the whole be nationalized¹."

¹ *Kontraktorsche Verhandlungen*, vol. III. p. 425. Wagner implied that this condition was already reached in America: but, as has been noted above,

It is admitted that German financiers are prompt to support industries that have great capacity for profitable development; and that this enrichment of the wealthy enables them to offer better employment to industrial and domestic workers than they otherwise could: but the chief advantages of German methods can be obtained without losing those of British methods. III, ix, 5.

5. *The Steelworks Union is a "general" cartel, designed to harmonize the interests of the various stages of the steel industry, in regard to production and marketing, and to the bounty conferred by the Protective tariff.*

It is obvious that there are many secondary functions of cartels (such as the promotion of technical studies, the organization of appropriate information as to distant markets, the collecting of debts under certain conditions) which can be more economically, if not more efficiently performed by a single powerful cartel representing many branches of a great industry, than by several cartels, each working for only one branch. But at present we are concerned chiefly with the two dominant aims of a cartel—that of maintaining prices at fully remunerative levels; and that of mitigating the sharpness of price-fluctuations in regard to the particular products for which the cartel is responsible. We have now to consider the difficulties which arise in the relations between a cartel in a single stage of an industry, and cartels or individual producers in other stages. Suppose that the price of a finished product is falling rapidly

Congress is caring for the interests of small men: and practices making for monopoly, which are common in Germany, are forbidden in America. Two days were given to the Halbzeug-Verband; and one day was occupied by a bitter controversy between the manufacturers of wire nails and the cartel, which supplied the rods used in making them. Consul Oppenheimer (*Report for 1902*, pp 26—7) says that the cartel of wire nail manufacturers made in six months a profit of £60,000 in the home market, and suffered a loss of £43,000 in the foreign market; and it was strengthened in this oppression of the home consumer by an agreement with the wire rod cartel to supply no material to a manufacturer of tacks who did not belong to his own cartel. Cartels fight cartels: but they can make common cause against the helpless home consumer.

As to the export prices of girders etc. in comparison with the home prices of the blocks from which they were made, see Heymann, *Die gemischten Werke im Deutschen Grossisenindustrie*, 1904, p. 215.

III, ix, 5. through the action of general causes, over which local cartels have little control: then a cartel, which hinders the fall in prices of any raw or half-finished material needed for that product, increases thereby the loss, which the fall of the price of the finished product inflicts on its producers. Therefore this action of a cartel in any one stage of a large industry tends to be injurious to producers in later, or so-called "higher" stages: and the conflict between them commonly results in the formation of cartels in those higher stages. The stronger position in such a conflict is occasionally that of the higher stage cartel: but if, as often happens, the lower stage cartel controls some material whose sources of supply are limited, it is the master. Innumerable conflicts of this kind have been waged in Germany and elsewhere, without seeming to point to any general conclusion.

But in recent years Nature, in association with human counsels, has gone a long way towards two kindred and yet partially opposed solutions of the difficulty in those industries in which the trouble was greatest. The first remedy is a breaking away from cartel influence by powerful capitalists: they find their advantage in working through several stages of a great industry, so that each department of a large business gets its material from a lower stage department of the same business, without any external interference as to the price at which the material is entered: these huge "mixed" businesses tend to ignore and frustrate the efforts of single stage cartels.

A second remedy in the form of a "general" cartel, which should embrace all classes of steel works except the very finest, had long been discussed as the ideal solution. The difficulties in its way were very great. Perhaps no combination of patience and organizing genius less than that of Germany could have overcome them even partially: but the need was pressing in order to allay home discords: and Germany was characteristically eager to organize a military array that might speak in the gate on even terms with the United States Steel Corporation. So, a scheme was ultimately developed, which went far towards realizing this ideal aim. It was found impossible to control under a single rule the higher, finer and more various stages of the industry. But nearly all the "heavy" steel works of Western Germany came together in 1901 to form a "Steelworks

Union," which should completely control the output and marketing of their simplest ("A") heavy steel products; and should control the output of those next in order (the "B" products)¹. III, ix, 5.

Such a federation has advantages over a trust, in that it leaves freedom of internal administration to the individual works: but it is less efficient technically. For as Herr Jutzki says, a trust "can arrange division of labour in every detail: it can diminish or estop one establishment whose condition is unfavourable, and enlarge another to make up: and it can produce the goods in demand in those places which are most suitable for the purpose, account being taken of geographical, technical and business conditions." But if a Syndicate goes far in such directions, it rouses internal discord; and charges of favouritism and interested motives are brought against its management².

¹ The reasons for going so far, and no further, are thus set out in the answers given by the Union to interrogatories of the Ministry of the Interior, and published in the *Kontradiktorische Verhandlungen*, vol. iv. pp. 500—560. It is able to control marketing as well as output for "A" products (including not only blooms, blocks etc., but also rails, girders, sleepers etc.) because they come only from a small number of great mixed works "whose financial and technical conditions are much alike." It has also controlled the output of "B" goods, on which a little further work has been expended, such as sheets, railway axles, wheels etc., though its few attempts to conduct their marketing have not prospered, and therefore its direct influence over them does not reach very far. If it did not control their output, its mastery of A products would be weakened: for "as most of the associated works produce them also, they would have been able to devote themselves to making B products in case of a decline in the market for A products: and thus to invite over-production and increase depression of prices." It endeavours "so to arrange its prices that they will return suitable (*angemessene*) profits to its members (*seinen Werken*); but so that its customers shall not be injured and rendered incapable of continuing work." Having referred to the fact that the peculiar character of the iron ores, to which Westphalia had access, had caused a sudden and excessive influx of capital which had caused violent fluctuations, it stated that "it opposes a broadening of the range, or an increase in the size of the businesses during the period for which its contract runs...and it strives for the greatest possible simplification of the work done by the individual steel-works owner." It appears not to have succeeded in the first of these two aims. But its efforts towards the second constitute its chief claim to contribute to the technical economy and efficiency of the steel industry. They have not however reached very far: and the *Kartell-Rundschau*, 1910, p. 838, quoted by Dr Tosdal in the *Quarterly Journal of Economics*, Feb. 1917, says that the partial utilization of equipment remains as before.

² See *Die deutsche Montanindustrie auf dem Wege zum Trust* by W. Jutzki, leitender Handelsredakteur der *Kölnischen Zeitung*, 1905, p. 43.

III, ix, 5. It allows a customer to specify, as far as is practicable, any particular brand that he prefers; and the higher price, which is conceded to a brand that is in great demand, is said to act as a stimulus to improvement in quality. Of course the stimulus to economy and efficiency in administration is little impaired by the discipline of the Union; but a new trade-mark cannot easily attract attention, when overshadowed by it. Its own direct marketing costs are of course very low: the A products of every country are marketed cheaply, because they are standardized and sold in large quantities. But there are numerous minor cartels and dealers' unions below it, each of which has its own expenses and charges. The Union has a seat, without a vote, in each dealers' union with which it is associated; and it reserves the right to veto the wholesale prices set by such an association¹.

Meanwhile there has been a continued increase in the fusions among coal mines, among steel works, and among businesses that own both. It seems that in 1910 two-thirds of the whole Westphalian output of coal was controlled by ten fusions, which also controlled nearly one-half of the production of the Steel-Union².

The Union does not confine its action to mere regulation of output and prices. It has also some constructive cooperative functions: it takes part in organizing international exhibitions, and it obtains information as to foreign markets pertinent to the industry. It is also a convenient centre for arrangements, such as those, under which the many different shapes and sizes of plates required for ship-building are distributed among various firms; so that each can find fairly steady employment for a limited number of rolls.

But complaints are made that it is too heavy a body to move quickly. Its great weight increases the anxiety which is felt on each occasion when its contracts come for renewal; for doubts then arise as to the willingness of the great mixed businesses,

¹ "The wholesalers also assign to each retailer his definitely prescribed territory; so that from the Syndicate to the consumer competition has been practically eliminated." See *Report of the Federal Trade Commission on Co-operation in American Export Trade*, 1916, p. 13. It includes a number of instructive answers from American Consuls in various countries as to cartels, etc.

² Dawson, *Industrial Germany*, p. 95.

which are its masters, to be content with their already large III, ix, 5. privileges. If it fails, the structure of the German associated coal, iron and steel industries will probably approach very near to that of the American¹.

There seems to be no certainty as to its length of life. But during the war, in 1915, when there was considerable anxiety as to its renewal, a project was launched for a yet mightier *Stahlbund*, which was to extend its control to stages higher even than B goods.

Before leaving the Steelworks Union a little may be said about its efforts so to adjust prices for the various stages of production, that each branch of the steel industry may have a fair portion of the bounty, which the Protective tariff allots to steel producers at the cost of German steel consumers, and in a less degree of other German industries that produce largely for export. This practice is the chief instance of a policy that seems to be just in principle; and it is well executed.

It is clear that, if any steel manufacturer buys his material at a price, which the cartel controlling that material has set higher for home than for export, he is likely to have difficulty when competing in foreign markets with others who have bought similar material, whether of German origin or not, at lower prices. A great part of the time of the Kartell-Enquête was occupied with complaints that German manufacturers of tinplates and of wire were driven out of neutral markets by British manufacturers, who obtained their material from Germany for ten shillings a ton less than was charged to themselves. The steel cartels were specially harsh in such matters; for they

¹ The *Report of the Federal Commission* already quoted contains (Part II, p. 16) an observation from the American Consul at Berlin, which may perhaps contain a touch of irony:—"The introduction of reinforced concrete came at the time of increasing building activity: the cement trust took advantage of it...and practically captured the entire building construction market and bridge work by substituting concrete at a much lower figure than steel girders could be purchased from the Verband. About two years too late, the Verband opened an office for competition against the concrete firms and reduced prices. If this had been done sooner, the triumphant entry of concrete construction might have been retarded for some years." That is to say, its lethargy alone prevented it from inflicting a grievous injury on the public in the interest of the steel industry.

III, ix, 5. had long before obtained redress from the coal cartel, for the smaller hardship that they were compelled to pay more for (German) coal than foreign competitors, who also used German coal. The coal cartel faced this difficulty, recognizing that the export of products, in making which coal had been consumed, obtained a vent for German coal as surely as if it had been sold abroad by aid of a special export price. Steel works which bought their coal paid in the first instance the full home price for it: some of the steel was sold at home, some abroad. The coal cartel wished them to have the coal used for the exported steel cheaply: and so it returned them a "refund" on a percentage of their coal, equal to the percentage of their product which they exported¹.

But some steel cartels were slow in giving similar refunds to those who used their products in higher stage work for export: and even when that practice had become general, it was carried out with little system and much friction, till the Steelworks Union took the matter in hand. It made great improvements: but even as late as 1908, German manufacturers, tendering for a gasometer to be built at Copenhagen, were undersold by British competitors making use of German steel obtained at low export prices: so the Union changed its policy. It no longer made uniform reductions on the export of any one class of steel to all countries: but kept those reductions small for exports to Britain and Belgium; while keeping them large for countries which do not generally export steel goods².

¹ Herr C. Kirdorf on behalf of the Coal Syndicate protests against the common use of the term "bounty" to describe what is merely a drawback or rebate—*Rückvergütung* or *Nachlass* (*Schriften des Social-Vereins*, No. 116, p. 282). The Protective duty gives a bounty to the German producer at the cost of all German users: when that share of the cost is returned to a German user for exportation, it only leaves him where he would have been, if no bounty had been given to the producer of coal from whom he bought.

² For this purpose the Union insisted that no export price should be quoted by any authority other than itself: thus greatly increasing at once its own labours, its own authority, and the difficulty of producers in conducting export trade. This worked so badly that in 1909 the Centre party in the Reichstag proposed a law, to the effect that pure rolling mills etc. which exported part of their produce, should be granted certificates for the duty-free import of such raw material as was represented in their exported goods. But this, like the rather earlier petition of pure rolling mills for a general remission of the

The steel industry has pioneered the cartel organization of numerous varieties of manufactured products, far in advance of other industries: and it is the main representative of that task. But it contains only a small part of the associations which pursue (under various names) policies more or less akin to that of the Steelworks Union and its subsidiary cartels. Many of them find great difficulty in arranging modifications of their standard prices to meet the variations in the qualities, sizes, or shapes of similar products coming from different sources: but perseverance and ingenuity have conquered in a notable manner. In the case of one set of goods produced by artistic specialists, an expert appraiser was called in to set the price on each article. III, ix, 5.

duties on raw iron, scrap iron, and half-finished goods, came to nought. (See Sir F. Oppenheimer's *Report*, 1909, pp. 119 and 117.)

The suggestion of the Centre party was on the same lines as the existing fiscal rule, under which the exporter of grain receives a permit to import a corresponding quantity of grain duty-free. That rule has indeed been much abused; partly in consequence of the permits being transferable, and available for grains at frontiers other than those at which the exports, that gave rise to them, left the country. But this does not seem to have been the ground on which the Centre party's suggestion was opposed.

CHAPTER X

TRUSTS AND CARTELS: GERMAN EXPERIENCE, CONTINUED

- 111, x, 1. 1. *Monopolistic tendencies of some German giant businesses in association with cartels and banks.*

A partial solidification of the various branches of the American steel industry was initiated by the foundation of the United States Steel Corporation; but it has been broadened by the interpermeation of financial interests with those of the steel industry. The chief financial powers in America have indeed had their origin in industry and trade, but more especially in industry, during the memory of living men; and American industrialists for the present control finance, perhaps as much as they are controlled by it.

But Germany, though younger than Britain, is older than America in this respect: and the rise of some German industrialists to a high place in the ranks of finance has gone together with an ever closer interweaving of broad financial counsels in the control of particular industrial interests. In both countries the cooperation of financiers and industrialists of wide experience and far reaching faculty has led to the development of policies, each of which aims at making for the larger and more permanent interests of those on whose behalf it is contrived; and with no further hurt to the rest of the people than seems to be involved in a well-ordered pursuit of that particular aim. This limitation is indeed of considerable importance from the point of view of the student of social well-being; but it may stand over for the present.

Fortune is said to favour great legions. Perhaps the reason is that a strong army, well led, will recover from the effects of ill fortunes, and forget them; while good fortune is likely

to bring its success to a climax, and thus become prominent. III, x, 1. A weak army, weakly led, makes little use of good fortune: and ill fortune, which may probably have accompanied its final disaster, is not overlooked by the historian. Similarly the powers of finance everywhere help a strong business to rise to great undertakings; while they are shy of assistance to a weak business, when in distress. In Germany the connection between business success and financial aid is especially close, as we saw when discussing the financial basis of business organization (above, II, IX, 4): and banks are alert and forward in associating themselves with the strongest industrial enterprises. Thus it has come to pass naturally that a large majority of the great German banks have been interested in the Steelworks Union; while a few have sided with the pure rolling mills¹.

Each of the great banks has representatives on several other banks and on a vast number of industrial enterprises. For instance the main purpose of Georg von Siemens, the founder of the Deutscher Bank, was to "foster and facilitate commercial relations between Germany and other countries²." Accordingly it took a leading part in fusing industrial and banking interests: and in the hands of Herr von Gwinner, it developed the practice of inviting leading industrialists to its councils; though indeed they do not exercise much influence on banking policy. But representatives of banks have exercised, for two generations at least, a strong control on industrial businesses which they support: and they "have always taken special care...to provide for the disposal of the products of the industrial companies in question to suitable industrial enterprises on which the banks were able to exercise some influence³."

¹ This statement by Riesser, *l.c.* p. 179, is representative of the "connection of the German great banks and their concentration" with "the economic development of Germany"; to quote from his title page. For instance, when the management of the great Phoenix steel works hesitated to join the Union, the powerful Schaaflhausen'scher Bank, which had taken a great part in founding that and other important steel works, compelled it to enter the Union (*ib.* p. 516).

² Details of its plans are given by Riesser, *l.c.* pp. 420—440 and 472—481: similar statements in regard to other great banks are also given by him.

³ Riesser, p. 375. He gives (pp. 897—920) details of some six or seven hundred representatives of important joint stock companies who have seats on

III, x, 1. These tendencies have very little kinship with cartellization: they correspond rather to a strain of character which is specially American; though they are developed with an intricacy of detail, which is appropriate to the German temper, with its faculty for quiet mental activity throughout long hours. And indeed we see here yet another reason for thinking that German tendencies towards cartellization are likely to yield place to those that are more distinctively American, as regards the larger affairs of industry and trade; though the activities of relatively small cartels in particular branches of industry and marketing show no signs of weakening¹.

The steel industries are a unique group; because practically the whole of the plant, as well as the material of every steel business, consists of steel products; and it is not probable that any other group of industries will exemplify as large and coherent an illustration of semi-monopolistic cartel organization as it has already done. Perhaps the woollen (and worsted) industry, and the cotton industry come next to it in width of range. In 1913 there were 55 textile cartels in Germany. Not much progress had been made by attempts to weld them into broad groups; but plans had been proposed for "the formation of a central national organization for the whole German textile industry, including trade associations as well as cartels...and for the organization of a special credit institution for the textile industry, similar to the German agricultural banks²."

one or other of the great German banks. And the Federal Commission, *l.c.* Part I, p. 62, presents in a great chart the direct and indirect connection of the Deutscher Bank with German and foreign concerns, many of which are dominating factors in important cartels.

¹ See Riesser's account of the influences of capitalistic concentration in the mining and metallurgical industries (*l.c.* pp. 725—749): he gives special attention to the widely ramified interests of the great iron and coal magnates, Herr Thyssen and Herr Stinnes.

The interpermeation of the interests of German banks is shown by his lists (pp. 642—6) of the banks which constitute the five great groups, each of which is led by one of the great Berlin banks; the Deutscher Bank being at the head. Their total capital (including surplus) was over a hundred million pounds in 1908. These tendencies seem to have been strengthened, temporarily at least, during the world-war; but it would be premature to express any opinion on the solidity of the new strength.

² *Report of the Federal Trade Commission on Cooperation in the American Export Trade*, Part I, p. 260, based on statements in the *Kartell-Bundschau* 1909, and 1915.

2. *The tendency of some of those industries, which embody the best results of German genius, to domination by a few giant businesses, with mutual understandings, while avoiding formal cartellization.* III, x, 2.

This tendency to domination by one or two giant firms is of course most clearly marked in those industries which embody the chief triumphs of the German creative genius; notably the electrical and the chemical industries. In 1900 the electrical industry was led by Siemens and Halske, and by the General Electrical Company (known now throughout the world as "A. E. G.," these being the initials of its German name): but beside these two there were twenty-six others of some importance. The twenty-eight companies were clustered in seven groups, supported by seventy banks. But fusions and communities of interests proceeded apace: and now the two leading concerns hold four-fifths of the electrical business of Germany in their own hands. Also they frequently obtain controlling interests in electric lighting and power works; which are their chief customers. The two act in concert on many occasions, especially in external trade: thus they have organized a special bank (Elektro-Trauband) for financing electrical undertakings. In 1912 the Siemens group gained financial control of the Bergmann Electrical Co.; but preserved its independent form, and claimed to allow it autonomy, on the ground that the health of the entire German electrical industry depends upon sharp competition among two or three large concerns, which encourages invention, and develops technical and commercial organization in the competing plants¹.

The German dyestuff industries again are too confident in

¹ This statement is derived from the *Report of the Federal Commission, l. c.* Part I, p. 278. It gives a chart representing many scores of connections of the A. E. G., through its leading officers and members of its Board. The Siemens group does not lag far behind.

These industries have the advantages of making standardized products that are required by the hundred thousand, or even million. Their plant is expensive; but it works for the greater part cheaply, when once set up. Thus only powerful capitalists can compete: and as failure by any product to work well might occasion much inconvenience, purchasers are apt to require well-known trademarks. These technical advantages enforce the suggestions made by representatives of the giant businesses on the direction of electricity-using companies street railways etc. in favour of those businesses.

III, x. 3. their magnificent technical mastery to care much for cartel organization. Every business has had its own patents and its own secrets; and the strongest have clustered together mainly in two groups, the Badische, and the Höchst-Casella¹.

Another great instance of the German tendency towards trusts is the growth of the German Metal Buying Combination. It had its origin in the London firm of Merton, in association with some members of the Cohen family. As it progressed, its headquarters were transferred to Frankfort: and its world-wide associations before the war constituted a most powerful community of interests².

3. *The increasing responsibilities of cartels to their several industries, and to labour.*

It would be unreasonable to lay much stress on the fact that the two great industries, in which German leadership is most conspicuous, owe little or nothing to the methods of cartellization. Those methods may possibly be beneficial to ordinary industries, and yet unsuitable to those that are exceptionally strong: systematic instruction is not shown to be misdirected by the fact that it is likely to hinder rather than help a pupil of genius: he goes best by his own way.

Nor should great importance be attached to the extravagant and even suicidal policies, that have been occasionally adopted by inexperienced cartels, which have generally worked on a

¹ *The Board of Trade Journal*, July 4, 1918, gave some details of this process. At that time nearly all the products of the chief businesses in the chemical industry were pooled: but a few specialities were reserved, temporarily at least, by individual firms. The dividends had recently averaged about 20 per cent.; and much capital had been written off. The Chairman of the Bradford Dyers' Association said early in the year that "the German colour and chemical works, and many auxiliary businesses are now embraced in one huge organization, with a working capital approaching £m.50"; while a good deal more is being obtained. The German Government assisted, of course with a view to military exigencies.

² The Imperial War Conference, in a *Report* [Cd. 9177] issued in October, 1918, gave an account of recent developments of the Frankfort Metallbank and Metallurgische Gesellschaft. It attributed their prodigious power partly to subtle financial intrigues; and partly to "the high development of scientific training and industrial research in Germany"; and recommended that certain measures, partly temporary, should be taken by which German control over the non-ferrous metallic reserves of the empire should be restrained.

small scale. An increase in the volume and the complexity of those affairs, for which a cartel is responsible, intensifies the gravity of the issues to be decided at meetings of the Council; and increases therefore the inclination of the larger capitalists to give time and thought to controlling the meetings. The Council of a mighty Syndicate generally bring to bear powerful minds, a fine sense of proportion and a wide purview: and they have access to inside information as to many branches of industry and trade. Their characters incline them to prefer large deferred gains to the smaller immediate advantages, at which weaker men grasp: and their large command over capital makes it easy to follow a waiting policy. III, x, 3.

But yet it is doubtful whether the weight of the task to which they are committed will not increase faster than their strength, fast as that grows. The Westphalian Coal Syndicate and the Steelworks Syndicate have already taken powers to handle and convey coal and iron respectively, and thus they may probably soon be considerable employers of labour; while the Coal Syndicate, if it acts on its new power of purchasing coal mines, will have taken a long step towards becoming a trust. Again, the Steelworks Union, and some syndicates, which are responsible for marketing several kinds of products, have been compelled to prescribe the kind which individual firms must produce, whenever it happens that demands for the different kinds are moving unevenly. Again the assignment of their total contingents to the several members, when a fixed rule would give no good result, forces the leaders to take on themselves some of the responsibilities of collective ownership. Thus new difficulties grow at least as fast as old difficulties are overcome: and the tendency of some cartels to attain monopolistic power was becoming more prominent before the war. It is notable that much assent was given at the Enquête to Professor Brentano's exclamation: "if we are to have a monopoly, we should at all events prefer it to be a State-monopoly¹."

¹ *Kontraktorsche Verhandlungen*, iv. 233 and 245. Another trouble is instanced by the complaint of some vigorous young members of the Cement cartel that, if they had been allowed to push their own brands, they would have obtained a strong hold on the market; but, under cartel management, consumers do not become familiar with their brands. Therefore any apportionment of contingents based on the special requests made for their brands is unfair: and

III, x, 8.

Meanwhile there is some sort of an understanding that the weaker firms will not be entirely suppressed. The leaders state indeed, with unquestioned sincerity, that they do not make it their policy to put prices so high as to enable ill-managed firms to survive: but they are not altogether free agents in the matter.

During the war there has of course been no disposition to disturb existing arrangements: but not long ago there were many rumours of internal conflicts, which seemed to threaten the lives of the Coal and Steel Syndicates; their place being taken by "a vast trust, arranged by the few leading concerns of the mixed type; which would thus end by being Americanized, after a process of evolution through an essentially German system of syndication¹."

"Labour" was not able to speak for itself at the official Inquiry into Cartels: but in 1905 two memorable meetings were held of the great German association for social studies (*Verein für Socialpolitik*). The first, opened by Professor Brentano, was on "the condition of labour in private giant businesses": the second, opened by Professor Schmoller, was on "the relation of the cartels to the State." Prof. Brentano contended that, as the law does not recognize collective agree-

if, on the other hand, the contingents are proportioned to the potential output of the firms, a premium is given to the creation of superfluous plant, followed by neglect in its management.

¹ Oppenheimer's *Report*, 1910, p. 157. In his last Report (1914, p. 11) he indicates clearly the inherent tendency of Syndication combined with a Protective tariff, to promote disastrous fluctuations of output and prices, in spite of a genuine endeavour to diminish them. Thus during a slump in an industry, a feeling grows that a Syndicate is needed to take charge: and that often causes reckless extensions, in order to justify high figures of participation. The same desire induced some makers of drawn wire, during a recent boom, "in their anxiety to be able to show a large clientele, to sell their manufactured articles even below the cost of their raw material (rolled wire); as was expected, a syndicate of drawn wire is now (June, 1914) being actively negotiated. But even syndicates already in existence are often powerless to prevent their members from engaging upon such boom extensions, though everybody knows that no syndicate is started without demands for fantastic figures of participation: they can levy a fine upon over-production (and during a boom such a fine is gladly paid), but sometimes the industrial constellation forces their hands: they encourage extensions by taking an indemnified delivery of the over-production." He gives recent instances of such action by the Coal and the Raw Iron Syndicate: and explains in some detail its evil results.

ments by operatives, the giant business stands as a unit against an unorganized crowd of individuals; and "the conditions of work are settled by the one-sided decision of the employer." Another speaker enlarged this argument by referring to the informal increase of the autocratic power, which resulted when the giants acted as a unit in a cartel: the great coal cartel was already urged to put a stop to "that competition of employers of labour which results in the pushing up of wages" (*In die Hohe-treiben der Löhne*).

It was argued that, if a single business has a quarrel with its employees, it can generally arrange that the work, which would have been allotted to it, shall be taken over by another member of the cartel; while the contingent of the first is made up, in some measure at least, at a later date. It was also urged that the power of employers, thus concentrated by cartel organization, tends to render the ordinary strike ineffective: the workers are therefore forced to look more and more to political action, associated with "demonstration-strikes" for a mitigation of their evils.

Much stress had been laid during the official debate on the statement that cartels exercise no *direct* influence on rates of wages: but it is obvious that their meetings facilitate organized strategical policy in wage conflicts. And, when Herr Kirdorf, the head of the Coal Syndicate, repeated that statement during the Social-Verein's debate on Prof. Schmoller's motion, the answer of labour came promptly that a recent meeting of the Council of that Syndicate "was closely followed by a nearly uniform reduction of wages throughout its district¹."

¹ See *Schriften des Vereins für Socialpolitik*, No. 116 (A.D. 1906), pp. 135—150, 169, 187, 411. A miners' representative (*ib.* p. 192) referred to a recent strike as partially successful: but later on, in the debate on Prof. Schmoller's initiative, he added (*ib.* p. 412) that the operatives had less chance of success in combat with a cartel than with a giant business. It is urged as a ground for confidence as to the future relations between cartels and labour, that the position of the operative has improved more on the average in those industries, in which cartels are prominent, than in others: but this is not a secure ground. For the most prominent cartels are naturally in industries, which the genius of the German people and their special advantages have enlarged and made prosperous. Making high profits, the employers can afford to pay high wages. As they use advanced labour-saving machinery, which

III, x, 4. 4. *Functions of the State in relation to cartels.*

The German Government has persistently upheld the right of businesses to combine with one another at their will, even though their tendencies be clearly monopolistic: but it has also held itself bound to intervene, when necessary, in order to prevent the power thus obtained from being used to the detriment of the public. It has twice made approaches to the coal industry with the purpose of influencing the policy of the Westphalian Coal Syndicate: and many writers advocate a vigorous extension of State ownership of coal mines. But mine-owners affirm that those, which it possesses, are badly managed; and miners declare that its mines are bad employers of labour¹.

In spite of recent geographical and scientific discoveries, Prussia's deposits of potash constitute an important partial monopoly. If they were owned by a single company, with sole regard to its own profit, the price would probably be set so much above cost of production as to yield a huge monopoly

often represents a value of several hundred pounds per employee, it is worth their while to pay wages high enough to attract the most highly skilled and resourceful artisans for the more responsible posts; and indeed for such work the most highly paid labour is generally the cheapest. Even their unskilled labour must often be well paid, though for another reason: for these growing industries demand more labour than the neighbourhood can supply, and recruits have to be attracted from great distances. But still they pay wages much below those prevailing in Britain.

¹ In 1904 the Prussian Government set the Dresdener Bank to buy secretly for it a controlling majority of the shares of the great Hibernia coal mine: but, suspicion having been aroused, other great banks manœuvred in various ways (which were upheld by the Supreme Court on appeal), to prevent this; and the Government was left with a large minority holding of the shares. It owns many mines in the Saar district: and later on it endeavoured in vain to use this as a lever for entering the Westphalian Coal Syndicate with a large voting power. Herr Gothen, an active member of the Kartellen-Enquête, a mine-owner, and a leading authority on the general conditions of Germany, argues (*Die Verstaatlichung des Kohlenbergbaues*, 1905) that State ownership is impracticable; though it would rescue the country from great dangers, if ideally managed. On another side, Dr Kollmann gives a brilliant picture of an ideal *Deutscher Stahlwerksverband* which might organize the whole of the industry, and become a national organ for research.

But employees are likely to pay more attention to such stories as that recorded by *The Economist* (21 May, 1910) of a lock-out in the German building trade; which lasted so long that some employers abandoned it: whereon the *Stahlwerksverband* was invoked to bring them to order by refusing to supply them with girders, etc. They were thus forced to continue the lock-out.

revenue, at the expense of stinting German agriculture's supply of a much needed fertilizer. Private owners tend to exercise their influence in the cartel in that direction: but, partly by legislation, and partly by means of its large holdings of the deposit, the Government compels the price for domestic sales to be kept rather low; while leaving the cartel free to put the price for exportation where it will. In this single case a cartel's export price is above its home price¹. III, 2, 4

Again, shipping on the Rhine and other inland waters has been threatened with a general syndicalization; partly under the influence of coal and steel magnates, who already have large fleets: so the three Governments of Prussia, Baden and Bavaria have obtained controlling interests in such shipping.

Nowhere, and certainly not in Germany, is there any doubt as to the high public services which trade organizations can render to the moral and material well-being of their members and of the general public: and Schmoller, in his opening address, recently mentioned, said that Germans rejoice in their development of the principles of association (*Genossenschaft*); they are therefore proud of their cartels; and yet prouder of the great men who founded them:—men who “had the widest outlook, the highest persistence and invention; and also the greatest tact and commonsense....The best of them were not mere money-makers: but on a level with the best generals and statesmen in talent, in character, and in achievement.” But nevertheless the conclusions, for which his long address prepared the way, are not altogether favourable to cartels. “The setting up of cartels implies a revolution of the constitution of German economy. The raising of prices in many directions injures all consumers, all not cartellized industries.” For these and other reasons he developed a plan by which the whole affairs of the cartels would be within the knowledge of a department of the State. The State should intervene to prevent unfair prices, with special reference to export prices: and it should override decisions which excluded or which punished

¹ The cartel has done good work in explaining to agriculturalists the uses of potash: but it has difficulties with some of its weaker members. Its story is well told by Dr Tosdal in the *Quarterly Journal of Economics*, Nov. 1913. See also Dawson, *Industrial Germany*, pp. 124—7.

II, x, 4. members harshly. It should compel the adoption of "compromises between organized sellers and buyers. This holds especially for settlements of the rates of wages¹."

German opinion seems inclined to advocate publicity as a hurt-less remedy for social hurts. But it is content with general profession: it lacks concentrated resolution and insistence. It seems to appreciate, even less than British public opinion does, the urgency of that class of questions which the American Bureau of Corporations, matured as the Federal Commission, has pursued with untiring energy. It has not yet learnt that though monopolistic powers in certain directions are necessary results of modern conditions, they are apt to cause grave evils unless controlled: while for obtaining effective control, even autocratic power is of little use, unless based on organized, long continued, authoritative studies.

The Kartellen-Enquête was a unique concession by the Government to a growing feeling of anxiety that giant businesses would master cartels, and thereby master the State, unless the State awoke to the dangers and difficulties of the situation. But, as we have seen, it was brought to an abrupt and unsatisfactory conclusion; which was thought to be partly caused by unwillingness on the part of the Syndicates to respond to questions which penetrated below the thin stratum of official inquiries. So long as the general opinion of a great people acquiesced quietly in such subordination of public to private interests, its example could not afford good guidance. There are strong reasons for thinking that the exploiting of the masses of the people by the dominant classes, through the agency of cartels, made an important contribution to the discontent which broke into violence after the war.

¹ *Schriften des Vereins für Socialpolitik*, No. 116, pp. 254, 270, 271, and 431.

CHAPTER XI

AGGREGATION, FEDERATION, AND COOPERATION IN BRITAIN'S INDUSTRY AND TRADE

1. *Introductory: a glance backwards.*

III, xi, 1.

Several excellent accounts have recently appeared of aggregations and federations in British industry and trade: and, partly for that reason, no details in regard to them will be given here, except by way of illustration¹. The purpose of this and the following chapters is to apply the instruction, which seems to be afforded by recent experiences, especially in America and Germany, to problems of Britain's present and near future: and to suggest that the strong individuality of the British race may find its highest development under the guidance of the spirit of constructive cooperation. It is true that giant businesses alone are capable of some of the chief tasks of industry in the present age. But, where their presence is not demanded by technical considerations, the immediate increase of strength, which would

¹ It may suffice to name (1) Macgregor, *Industrial Combination*, 1906; (2) Macrosty, *The trust movement in British industries*, 1907; (most of the businesses described in it however have had no considerable monopolistic tendencies; and belong to the class which are described in the present work merely as "giant businesses"); (3) Levy, *Monopoly and Competition, a study in English industrial organization*: a careful piece of work published in Germany in 1909; English translation, 1911; (4) Carter, *The tendency towards industrial combination*, 1913, a reasoned record of facts reaching nearly up to the world-war. The American Industrial Commission had published in 1901 a good short account of "Industrial Combinations in England" in its Report, vol. xviii. pp. 1-74.

The history of British giant businesses generally, as well as of distinctly monopolistic aggregations and federations (so far as they desire to take the public into their confidence) can be read from year to year in the spacious records of their proceedings, which they cause to be inserted at high charges in appropriate journals: files of *The Economist* are specially helpful in this matter.

An excellent terse survey of aggregations and federations in British Industry is given in the *Report on Cooperation in the American Export Trade* by the Federal Trade Commission, 1916, vol. I., especially p. 88.

III, xi, 1. result from a rapid enlargement of their sway, might be purchased at too great a price: the value of that free individuality, which has made Britain great, is apt to be underrated in a hasty view. All praise must be given to the constructive work of German cartels: but it can be dissociated from their restrictive and militant policies. "Cooperation" in the special use of the term, which is familiar to British workmen, is but one outcome of that fortitude in purpose, tempered by the spirit of good fellowship, which has spread the British race over a great part of the world: constructive cooperation in the larger affairs of industry and trade is both required and facilitated by the character of Britain's industries and her geographical configuration.

Before looking forward, let us take a glance backwards. We have seen that monopolies of early times were seldom without plausible motive, and often did excellent work in their youth: but they were apt to outlive the strength and high purpose of their founders, and to become obstructive as well as incompetent in their old age. Moreover the Tudors granted them recklessly to eager courtiers; and thus was set on foot that intense hatred of monopoly among England's people, which was destined to exercise a great influence on her later history. Hatred was mingled with contempt in the eighteenth century; when the great Joint Stock and Registered Companies, which had done good service in the past, became for the greater part inert, effete, and even corrupt. In the first quarter of the nineteenth century the very unwise and rather selfish use, which British landlords made of their monopolistic control of Parliament to raise their own rents at the expense of the food of the people, intensified this hatred of monopoly still further. And lastly the advantages, which a country may derive from perfect freedom of enterprise in industry and in trade were emphasized, and even exaggerated, by observation of the vast increase of the country's economic strength in the second and third quarters of the century, when Protective duties were gradually abolished.

During much of this time business was chiefly in the hands of self-sufficing, self-made men; who were often crude, but always vigorous. They worked harder than any other set of business men in the world; and their superiority in strength

over competitors was continually increased by their growing command of the economies of production on a scale that was relatively large then, though small in comparison with that which prevails now. England's flocks of sheep had contributed to set up her woollen industries by aid of an automatic organization of industries and trades, more highly developed than any other that had been spread over an equally wide area: and had prepared the way for the automatic organization on an even larger basis of her cotton industries. III, xi, 1

Thus many diverse influences, some of them partly accidental, combined to give British manufacturers and merchants the upper hand over those of other countries in the third quarter of last century: and this success engendered easy-going habits of life and work among many of the sons and grandsons of those whose strenuous, if sometimes uncouth, energy had revolutionized industry and trade. In the next two decades some signs of weakness became evident: but in the present generation there has appeared a firm resolve to reconsider British methods in relation to the problems of the new age; and to the solutions of those problems which were being worked out in America, Germany and other countries.

Of course suggestions, derived from the experiences of any one country, cannot safely be applied to the problems of another, until account has been taken of the degree in which each experience depends on circumstances that are not to be found in the other. Thus, on the one hand, attention needs to be directed to the opportunities for stringent monopolistic control of the machinery of industry, and of prices, which America derives from geographical causes, and—though to a much less extent—from her Protective tariff; and which Germany derives from her Protective tariff. And, on the other hand, it must not be forgotten that Germany's strong, though harsh, military-bureaucratic organization has enabled her Government to intervene with a firm strength and security, that are not to be found in the interventions of the Government of a democratic country: while America, conscious of this difficulty, has studied the problems of monopoly with unrivalled thoroughness. Her conditions have given to these problems a breadth and intensity far in excess of any that have appeared elsewhere: and her methods

III, xi, 2. are not suitable for adoption without reserve in other countries. But they have been developed with so much energy, and so much sincerity and openness, that they seem to offer guidance of high value to Britain in view of the recent revival of some broad monopolistic tendencies. For the two peoples are akin not only in race, but also in openness of character and directness of action; and the same principles of Common Law apply to the regulation of monopolies in both.

2. *The strong individuality, which created Britain's industrial leadership, is still her most important asset. But it needs increasingly to be supplemented by readiness to cooperate with others in large affairs; while the supersession of small businesses by large in many industries is inevitable.*

As we have seen, the industrial faculties of England developed tardily, and owed much to the guidance of Dutch teachers who had learnt much from City States: even the enterprise of her navigators lagged long behind that of the Portuguese. But gradually she became, first a rival, and then a leader of the strongest: partly because the ocean defended her from the military violence that crippled Holland; but mainly because her people had never been either inclined or compelled to look to authority for instructions. Each man settled his own affairs, subject to but little discipline save that of custom. And since the shackles of custom were not felt, they merely narrowed the range of action of individuality: they did not destroy it. So individuality accomplished great things, with ever-enlarging scope: and as the ages passed, a great part of the world came under British influence; Scotchmen joining with Englishmen, and often leading them.

He, who respects his own individuality, is unlikely to be a tyrant: he may be wanting in tact, and in quickness to assimilate that which is good and helpful in the temper and habits of others. But he is sure to be frank, and likely to respect the individuality of others: refusing to be regimented, he is unlikely to regiment others. Thus individuality and resolution, combined with toleration, have made the British Empire great and coherent.

But such toleration is not inconsistent with an excessive

respect for one's own judgment and faculty: and, though confidence in one's own resources may be an almost unmixed good in matters that are within their reach, it may be a source of some weakness in larger matters. That is to say the specially British qualities which made Britain great, when business was on a relatively small scale, may not suffice for her need now: for industry and trade are growing in breadth and depth at a rate unprecedented, even in the age which is sometimes described as that of the "Industrial Revolution." III, xi, 2.

As late as the middle of the last century the capital, required to enable a business to command the most efficient and economical methods of production then known, was relatively small: and specialization on a rather narrow range of work was facilitated by that quiet organization of industry which tends to grow up, almost inevitably, where the technique of production and the character of the goods produced do not change very rapidly. Thus, it was reasonable to attribute a great part of Britain's industrial strength to small growing businesses: any loss that might arise from slight imperfections in their plant fell mainly on themselves; while the energy and elasticity, which they contributed to industry, accrued in large measure to the whole country.

But when the energetic creator of a business of moderate size died, he often left it liable to payments to members of his family, who could not take part in developing it. Thus its resources were straitened; and its owners perhaps lacked the energy, the initiative, and the delight in hard work by which it had been created: but yet they had a just pride in the family name; and they were reluctant to turn it into a joint stock company, in order to attract new capital. It was therefore apt to lose creative force, even if the branch of industry, to which it belonged, retained nearly the same technique as had prevailed in the preceding generation: while, if its plant needed to be organically changed in order to maintain relative efficiency, its continued existence might even be a hindrance to progress. Instances of this kind have been so numerous, that a new tradition is in danger of growing up, to the effect that a small business must be out of place in the new age: for that belongs to large businesses.

This tradition in its exaggerated form is repeated parrot-

III, XI, 2. wise: and it is all the more mischievous, because there is much important truth at the back of it. If an old business is small, it is rather likely to be a stagnant business: but an enterprising man, who sees his way to fitting the work of a small business into the large frame of national industry, may render as high service to the country now as ever. The expansion of technique has taken many branches of industry beyond his reach: and it is likely to take more, with ever increasing speed. But, on the other hand, it is enlarging rapidly the whole area of industry; and it is developing new ways in which the deliberate cooperative standardization of products (especially such as are component parts of larger products) may outdo old-fashioned stagnant custom in the opportunities offered for narrowly specialized work.

The present group of chapters will be much occupied with this class of consideration; because there is reason for thinking that the advantages which some other countries, and especially Germany, have derived from a semi-military organization of industry are not in fact as great as may appear at first sight; and because immediate material gains, obtained at the expense of a diminution of the spirit of free enterprise, may prove to have been too dearly bought, even from a merely material point of view.

It is true that the new age, with its rapidly rising standard of education for the working classes, is greatly enlarging the field from which to recruit men fitted to originate new ideas, and to face the risks involved in putting them into execution. It is true that America owes a great part of her industrial prowess to men who began life in low station. And it is true that the Jewish race, especially in Germany, supplies an almost inexhaustible reservoir on which to draw for new methods of making profit, most of which inevitably make for the good of the nation. But yet a nation cannot fail to become poorer in character, and perhaps even in material wealth, if comparatively few of her people have larger opportunities for resource in new construction, and for courage in taking risks, than commonly fall to the lot of an official in a great Company or in the service of Government.

We ought therefore to cherish strong individuality as a

priceless national asset: but at the same time to recognize that, like other noble qualities, it is liable to be misapplied; and that it may even degenerate into a morbid desire for secrecy and isolation. It has indeed sometimes been charged—though apparently without adequate cause—with being responsible for an unreasoning disinclination, which is occasionally found among certain classes of British business men, to unite their efforts in tasks, that are needed for the proper development of industry but are too large for a single business. III, xi, 2

The adage "an Englishman's home is his castle" represents a side of national character that was developed in centuries of successful struggle against the semi-military despotism, from which nations subject to the invasion of great Continental armies could not escape; and has been a chief foundation of the British Empire. But, in so far as it induces a manufacturer or trader to shun associated action, on the ground that it would enable his associates to penetrate into the secrets of his business, it may be a source of national weakness rather than strength. What each gains by his secrecy is less, in many cases, than what he might gain by a liberal policy of give and take with his associates. There is however some ground for doubting whether this secrecy is caused, as much as is sometimes suggested, by jealousy. Perhaps a more potent and general cause is a certain lack of imagination; which has long been noted as a characteristic of those whose minds have not been expanded by an adventurous life, or by some high intellectual ambition. This is indeed yet another penalty which the country must pay for having neglected so to broaden national education as to bring the student into direct touch with the large real problems of the modern world.

Those English manufacturers, who pioneered the methods of modern industry, had little education: but they went early to work, and were in direct touch with realities throughout their lives. In the modern age, they spend long years at school, and perhaps at College; and if ultimately they become officials in a giant business, they may never get very close to realities. But if they enter a business of moderate size, even after the freshness of early youth has passed, their real education is likely to reach far. If the heads of such businesses are eager to learn,

III, xi, 3. and willing that their experiences should be helpful to others; they will greatly increase their chance of holding their own, in spite of the fact that giant businesses can afford to make larger and more frequent experiments than they can. Strong individuality, resolution and directness of purpose may enable a multitude of British businesses of moderate size to hold their own against powerful aggregations in all those industries, in which no over-mastering technical advantage belongs to massive, continuous production: provided these qualities are united with frank willingness to learn from others; and to cooperate genially with others in matters in which unfettered association has large opportunities.

That combination of individual liberty with orderly cooperation, which is characteristic of the British people, is not indeed specially prominent in industries, in which technical influences make most strongly for integration, such as will be considered in the present chapter: but they will come to the front in Chapter XII. In Chapter XIII they will again fall partly into the back-ground under the influence of the ever increasing temptation, which modern conditions offer, to enter into sectional combinations for getting the upper hand in matters of bargaining. But at the end we shall reach new movements, which give scope for all that is best and most characteristic of the race.

3. *Movement towards aggregation in the British coal industry.*

Our first illustrations are naturally taken from the coal and iron industries: though these are no longer distinctively British¹.

Coal and iron are indissolubly connected: iron—or, as we rather say, now, steel—industries are rivalled only by transport industries in their use of coal: and coal mines are large consumers of iron products; insomuch that, especially under the rule of German cartels, steel works often find some outlet for their spare energies during a general depression of industry, in improving and developing the plant of their mines. In so far as this influence reaches, it tends to stabilize employment and prices; and

¹ See above, pp. 60, 61.

is a benefit to the nation as well as to individual businesses, III, xi, 3. that pursue a far-seeing policy in such matters.

The Westphalian Coal Syndicate pioneered the route by which the steel and other dominant cartels made their way to power: and it may be well to diverge from the main course of our argument to consider some curious episodes in the history of British coal, before passing to the steel industry, which in Britain as elsewhere shows the problems of aggregation, and federation in their fullest developments. Germans themselves admit that the fundamental ideas not only of their simple cartels, but also of their Syndicates, were anticipated by more than a century in the Newcastle Coal Vend. Its power was based on having good access to the sea for the products of exceptionally rich mines¹.

Later on, in 1897, Sir George Eliot suggested the formation of a giant company to purchase all the British coal mines, except those owned by iron-masters; and to work them as a unit. He laid stress on the undoubtedly 'inordinate wastes involved then, as now, in marketing coal competitively; and in necessarily

¹ See above, p. 509. The English coal trade has nearly always been full of episode. It was regulated now in the interests of the naval strength of the country, now of operatives, now of consumers; and monopolies were granted on condition of paying a tax and selling in London not above specified prices. Engrossing was prohibited. Meanwhile combinations among coalowners, traders, and shipowners were constantly starting into life. At last the concentration of the greater part of the then unprecedented demand of London for the coal, which could be brought cheaply by sea from Newcastle, bore fruit in the formation of the Vend in 1771 (even earlier, according to the H. of C. Committee of 1830). A central committee watched the market, and decided at the beginning of each month how much should be offered at Newcastle for sale in London. Exports to the Continent seem not to have been controlled. A start was made with 800,000 Newcastle chaldrons (about 2,000,000 tons) as a nominal basis; and there was assigned to each colliery a quota on this basis. Say the nominal quota of a colliery was 20,000 chaldrons: if then for any particular month the Vend was fixed at 60,000 chaldrons, it would be entitled to a fortieth of this, i.e. to 1500 for that month. Each colliery fixed its own prices in Newcastle for the year at whatever level it chose: but it might not change during the year. The shippers selected their own coal, and sold at what prices they chose. A series of commissions of inquiry pointed increasingly to the belief that the London consumers' best protection lay in the growing competition of other coal fields, and this was justified by events. The pretence of the Vend to steady prices was not seriously regarded. It sold cheaply abroad: its coal could sometimes be had in Petrograd at half the London price. Its story has been told many times. Its close similarity to the modern cartel is emphasized in Cohn's *Geschichte des Verkehrswesens*, while its picturesque side is best seen in Macpherson's *Annals*.

III, xi, 3. leaving coal unworked near the boundaries of adjacent mines. A high limit was to be assigned to the profits which the trust could divide without the sanction of the Board of Trade. The project received much favour: it was abandoned mainly on account of difficulties in detail. But amalgamations have long been in progress in South Wales; where the steam coal is of such excellence as to have a high monopoly value, especially for naval use¹.

Stress has sometimes been laid on the apparent paradox that, while many German cartels owe much of their strength to Protective duties on competitive imports, the strongest German cartel is concerned with coal, which has no such Protection. But in fact coal is defended by its bulk: and the prices of coal along the banks of the Rhine and the Elbe are governed, not by the fiat of the Westphalian Syndicate, but by the prices of British coal, including the low cost of bringing it by sea and river. Its case is in some measure representative of salt and cement—two other products of the earth, which contain but small value in considerable bulk².

¹ See *The British Coal Trade* by Prof. H. S. Jevons, pp. 317 to 334. A large and suggestive chart of the various fusions, and communities of interest of the Cambrian Coal Combine, before its recent extensions, is given in the *Federal Trade Commission's Report on Cooperation in American Export Trade*, vol. 1. p. 344. Sir George Eliot's scheme was commended by Prof. Brentano at the *Kartellen-Enquête (Kontraktatorische Verhandlungen)*, vol. 1. p. 749). The difficulties that have opposed the formation of effective permanent associations in the British coal trade in recent years are set out by Carter, *l.c.* pp. 223—240.

² The Portland Cement Manufacturers' Association has something approaching a monopoly for the finer sort of cement. But its common sorts can be made so cheaply in so many districts, and its cost of carriage is so heavy, that many scattered works for producing them long maintained some partial local monopoly. The movement for amalgamation however continued and was nearly completed during the war. Its large resources are however used constructively rather than combatively. It educates the public in the uses of cement, and small producers in the technique of their work. Compare above, p. 571 *fn.*

Salt is the only important material, other than coal, of which Britain has a predominant supply. It has given rise to a good many semi-monopolistic ventures in heavy chemical industries, based on it; some of which have not prospered. The success of the great firm of Brunner and Mond appears to reflect high technical skill and business ability, combined with a moderate and steadfast policy.

4. *Plasticity of structure throughout the steel industry. III, xi, 4*
Conflicts and harmonies of interest among its several stages.

The steel industry is so manysided and various, and yet its several stages and branches are so closely associated, that their mutual relations afford, in Britain as elsewhere, an epitome of almost every kind of amicable association and combative combination. They call for strong faculties, careful study and alert action. No nation has undisputed preeminence in them.

If an engineering firm anywhere needs a cutting tool that will bear an extremely high temperature, he must buy it from Sheffield: and yet the tungsten used in it has come chiefly from Germany; though Germany owns little of the ore from which tungsten is made, and nearly half the known supplies of that ore are in the British Empire. Again, German cutlery made largely in standardized shapes, which are struck out in the rough by powerful machinery, can be sold for common uses in Sheffield itself; and this result is partly due to British adherence to old tradition: but yet Sheffield skill makes fine cutlery of such excellent quality that none can surpass it: perhaps none can equal it. Sheffield is the home of some of the most delicate of British steel industries; and also of those which are beyond the range of any but a mammoth business: and Sheffield is in all these respects an epitome of Britain¹.

It has already been observed that the steel industries are of exceptional interest, because they constitute a group, each member of which is a chief customer, and often the only customer of several other groups. If a cartel in any one stage pursues a restrictive policy, the hurt thence arising may spread far and wide: but its first, and often its chief, effects are likely to be felt in the stage of steel production immediately above it, and—in some cases—in the stage immediately below it. Partly, for these reasons, a steel business can extend vertically upwards or downwards without passing into a different "atmosphere" of technique: much of the additional plant, that it will require, is likely to differ only in detail from some which it has been already using, and perhaps even making. And, with exception for the first stages of the industry, nearly every class of employee that

¹ See above, p. 213.

III, xi, 4. is needed in the new extension is already on hand. These first stages have in effect become one in relation to some of the larger problems of the future: for the economy resulting from their fusion must gradually overbear all resistance. And yet a man, who has inherited a fairly good business in any one of them, cannot be blamed very severely if he is somewhat slow to realize fully how much it belongs to the past.

This is no doubt an extreme case: but other stages of the steel industries afford similar, though less striking instances of the increasing need which the present age creates not only for a broad view, but for a long-sighted view of business problems. Courage is misapplied when it struggles against the inevitable; as happens sometimes when British iron-masters remodel old works, although they cannot be brought up to the level of modern technique without being recast by aid of additional capital, and on a larger scale. In this connection our attention is called to the fact that "the United States Steel Corporation, which alone controls an output of iron and steel greater than the whole production of the United Kingdom"; and the vast Thyssen Company of Germany, are abandoning the practice of reconstructing a works that has fallen behind. They allow it to plod on, while they set up new works of the most advanced model to take its place: when that is ready, the old is dismantled, and either reconstructed entirely, or abandoned¹.

Somewhat similar cases occur in other industries: the small miller long fought bravely but hopelessly against the giant flour mill; and the small dyer against the giant dye works: but their contests were as hopeless as that of the hand loom weaver in contest with the power loom. And yet their fate may have been in some measure better than his; for in many industries, when the small employer abandons his own works he may hope that he will be ere long "found as a high official of large limited concerns. ...He may not have the hope of large profits: but he undoubtedly has great uses, in his readiness to adopt and try new things—in the application of his inventive genius, and in the practical knowledge that he himself acquires, through actually working

¹ *Report of a Committee on the position of the iron and steel trades after the war* [Cd. 9071], 1918, p. 20. This is one of a series, as to which some general remarks will be found on pp. 601—2.

in his own shops and in daily contact with his own men. It is to be noted that many of the men at the head of great works to-day, in the capacity of directors, have only a theoretic knowledge of the works they direct, as compared with the practical knowledge which their fathers and grandfathers had before them¹." This is one of several ways in which the individuality of the small business man remains an important asset. Moreover, there are good grounds for rejoicing in the fact that the progress of technique, while pushing him out of the main track of many industries, continually opens to him new opportunities, if he will apply energy and resource to developing some speciality².

III, xi, 5.

5. *Illustrations drawn from the steel industry of the national interest in the standardization of products, the intensive specialization of businesses, and the maintenance of open markets.*

The advantages, which a business derives from vertical expansion, are chiefly in regard to the organization of its work, and to the economies of marketing. As a rule it obtains few additional economies on the technical side of production: for there results little or no increase in the resources of plant and skill which it commands for any particular task. But it can so adjust the output of its lower stages to the requirements for material of the upper stages, that scarcely anything needs to be bought except for the lowest stage; and scarcely anything needs to be marketed except from the highest stages: while in the special case of a steel business, as has already been observed, it is often possible to shift *temporarily* some labour and some plant from work for one stage to work for another. In any case the higher stages can rely on the quality of the material supplied from the lower, and on its adaptability to their wants; especially if "planning" and "routing" are organized scientifically³. A steel business may even transfer some plant and some skill *permanently* from working for one stage to working for another; when the adjustment between successive stages is upset by changes in the proportions of its various products.

If the business is sufficiently large to contain several sets

¹ *Report on the Engineering trades after the war, 1918* [Cd. 9073].

² See above, pp. 244—9.

³ See above, pp. 369—375.

III, xi, 5. of organizing brains of the highest quality, each stage may attain to the highest efficiency. But such conditions are very rare: and, on the whole, the elasticity of national energy seems likely to be better advanced when each stage occupies the whole attention of a strong enterprising business. When the total stock of brains of the highest originating and constructive faculty in a business is not very large, the interests of the business and the country are likely to be best served, if its whole energies are concentrated on a range of tasks not too large and diverse to be completely grasped by one set of minds.

Variations in process and in product can then be tried without stint, even though a successful issue will effect only a small percentage of economy: and new ideas, at first crude, may germinate and develop, till they become important additions to economic strength. So vital to Britain's prosperity is the maintenance of full freedom for horizontal, rather than vertical expansion, that the country has a deep interest in defending the home market for everything, that a manufacturer may desire to purchase, against an artificial manipulation of its prices by a cartel.

Britain's open markets supply the shipbuilder with reasonable security as to his purchases: and so important is that advantage that, as we have seen, Germany exempts steel for ship-building from import duties. Lord Furness tells us, indeed, that "the shipbuilding firms on the [British] coast buy many details in this country cheaper than they can themselves produce them, and yet the manufacturers of these details make very substantial profits. This they do of course by specialized production and concentrated management." Engines and boilers are built by each firm to the requirements of various classes of ships. "Each builder has some points of excellence, which in combination would...tend to place British construction on a higher plane in the markets of the world. Each has an expensive staff producing designs and patterns identical with those of its competitors¹."

¹ From an address delivered in 1908, see Appendix II to Levy's *Monopoly and Competition*. Progressive standardization in the steel industries is described above, II, iii, 4.

Standardization of parts can of course be carried very much further than can that of the whole of a great complex, such as a ship. But the extent, to which a shipbuilder can rely on a prompt supply at reasonable prices of various classes of material or component parts that he needs, depends in a measure on the standardization of the general type to which he is working. This standardization had been carried far in individual works, before the war, of course chiefly in regard to cargo vessels. The North-east Coast Institution of Engineers and Shipbuilders has been engaged on a genuine task of constructive cooperation while drawing up a "guidance specification": and, of course, in any type of engine, where the general design is similar, the habitual adoption of such a specification would greatly diminish costs¹. III, xi, 5.

The lack of cooperative standardization in British industry is conspicuous in regard to locomotives. Every considerable railway has its own models, though the materials are to some extent standardized; and it makes nearly all its own engines; partly because a railway is able to borrow money for extensions at exceptionally low rates².

Passing to another aspect of the problem it may be remarked that the electrical industry owes much of its progress to a few giant businesses; but there seems reason to think that constructive cooperation in regard to standard details and other matters might hasten the specialization of the numerous works engaged in it in Britain now³. Similar constructive cooperation

¹ This paragraph is reproduced in substance from *The Report of the Committee on shipping and shipbuilding industries*, p. 33; where it is urged that the Government should appoint a Standards Committee of Shipowners, Shipbuilders, and Marine Engineers to carry the work further. It is recognized that local and other variations in the work to be done will require the number of standard types to be considerable.

² See above, pp. 322—3. The Committee on the Engineering trades reports [Cd. 9073], p. 12, that it would be well that "the railway companies should themselves agree upon a limited number of types for their own use, and produce them to a limited quantity in their own workshops, giving to the manufacturers in this country a reasonable share, at competitive prices, of the types required and thus obtaining a reliable check on their own cost of production." The unification of railway control, whether under Government or otherwise, would stay the wastes that are caused at present by the lack of standardization: but it would increase the need for large independent locomotive works; in order to provide some check on the wastes and ineptitude of a huge organization, which has nothing to gain by alert and economic methods of work.

³ The Committee on the Electrical trades reports [Cd. 9072], p. 8, strongly

III, xi, 5. has done much, and may do very much more, in developing agreements as to standardization, which will enable firms of moderate size to specialize on the production in vast quantities of particular component parts of machines in large use by manufacturers, or in yet larger use by the public. A suggestion has indeed been made that some of the munition plants, set up by the Government during the war, should be sold on easy terms, subject to the condition that they should continue intensive, variously specialized work, similar to that for which they were set up. Such, for instance, might be "the manufacture of ball-bearings, piston rings and spinning spindles....A motor-car manufacturer can buy, cheaper than he can produce them himself, his yearly output of, say, 1000 engines of three or four sizes from a specialist producing ten or twenty thousand of the same sizes for ten or twenty car manufacturers. Or take a machine-tool manufacturer, producing a collection of 500 machines of various designs in a year, who has hitherto been in the habit of making all their levers, pulleys, gear, and hand wheels. He may have some automatic or semi-automatic machines for producing these goods, but a specialist producing such parts for the trade can supply a superior article at a lower price¹."

Specialization of this kind is generally effected automatically: but we are told of a notable recent case in the machine-tool trade, in which it has been deliberately organized. Ten firms have agreed that, while setting up a common selling agency, they shall retain individual independence, on the understanding that each will limit its production to a single type of machines. This plan seems likely to prove of great national benefit, if generally adopted, with due provisions against excessive monopoly prices. Under a Protective tariff the economy resulting from the specialization would probably not suffice to prevent the plan from working against the general interest².

in favour of the "amalgamation..., or the development of the practice of association for common purposes" in order to obtain this end. It does not however seem necessary that this association should extend much beyond the organized study and development of standards.

¹ See the *Times Engineering Supplement*, January, 1917.

² The following details of the plan are given in the *Times Engineering Supplement* for June, 1917:—"the two Birmingham firms will concentrate on the production of light radial drilling machines, certain sizes of milling machines, and capstan lathes. The Manchester firms will provide grinding machines (the

The experience of the State in organized specialization of III, xi, 5. work during the world-war is helpful, in spite of the exceptional conditions under which it has been obtained. On the financial side indeed little can be inferred from it: for the State being sole producer and sole purchaser has had no expenses of marketing, and little reason to consider whether its products might be left on its hands. Necessity has ruled: and the future value of its factories has not needed to be estimated by skilled accountants in order to make up-scientific cost valuations for its output. But its experiences on the technical side are suggestive.

Its new works have been scattered wide over the land, partly in order to tap new sources of supply of labour suitable for repetition work. The fact, that it did not find much need for gigantic individual establishments, tends to support the opinion that standardization, specialization and thorough organization, whether automatic or deliberately contrived, may enable a multitude of businesses of moderate size to attain nearly every important efficiency and economy that appear at first sight to belong exclusively to giant businesses. But that inference might carry too far, unless full account were taken of the concentrated power of study and experimentation on a vast scale, which lies at the back of orders given to the munition factories.

Thus again we are brought to the fact that thought, initiative and knowledge are the most powerful implements of production. In relatively small work, such as that of chemical dyes and optical glass, the main responsibility for them may well rest with a few giant firms: but in larger work they belong to the world as a whole. No one country can make great advances in it in secret: alert rivals are soon able to select the best points in any new departure, and perhaps to improve on some of them. And yet a country, that is content to wait upon the new knowledge acquired by others, will always lag somewhat behind; and her products will hardly obtain full credit, even when in fact they are made according to the most advanced technique. For this reason, among others, it seems that the

work of one firm), milling machines, and boring mills. The Halifax shops will produce heavy radial drilling machines and the lighter sizes of slotting and planing machines, while the Scottish firms will manufacture the lighter lathes and heavy slotting, planing, and other machines." See also above, II, iv, 4.

III xi, 5. growth of a considerable number of great firms in all heavy industries, and especially in heavy steel industries, is to be welcomed: the present age offers ever increasing scope for large experiments, of vital importance to progress, which cannot easily be arranged cooperatively; while yet they involve outlay and financial risks too heavy to be borne by any but a giant business.

To conclude:—such a growth will of course tend to impair the supply of that individual initiative, which is by far the most important element of national wealth: but that tendency may be relatively slight, if an open field be kept for small businesses in appropriate industries. An important means to that end is constructive cooperation in every fitting matter, and especially in such standardization as will enable the small man to work for an open market. Of course the standardization must be on broad lines; partly because an exceptionally large part of British manufactures is designed to be sold to peoples of widely differing habits and requirements; and partly because some element of variety is an end in itself in regard to many things designed for personal use; while it dominates nearly all that aim at artistic distinction.

Moreover the causes, which have impelled American and German steel industries towards extreme aggregation, are at work in Britain. The recent Committees on the iron and steel trades, and on the engineering trades, recommend severally “that British iron and steel manufacturers should be urged to form combinations for the purpose of laying down large and well-designed new units”; and “that in the interests of the country the engineering manufacturers be encouraged to work together in larger units, either by amalgamation or by joint pooling of resources, by specialization of production, and by organization of export sales, and for the purchase of raw materials.” There seem to be solid grounds for these recommendations, at all events in regard to some branches of the steel industry. It will be urged later on that many developments thus indicated, are measures of constructive cooperation, free from any suspicion of danger to public interests; though others are in some danger of being perverted to antisocial purposes. They are thus representative of British temper: which is not

addicted to militant aggression, but yet sometimes drifts in that direction under the pressure of circumstances, and without that deliberate harsh purpose which has been prominent in some German cartels; for indeed self-analysis is not always congenial to the British business man. III, xi, 6

6. *A monopolistic tendency in a branch of a great industry, the highways of which are in general free to all comers.*

In the chief branches of the larger textile industries each considerable factory contains several similar groups of rooms; so that it might be split up into several factories with little loss of technical efficiency: though there would of course be relative losses in the costs of management, of building, of power (unless power were obtained from central electrical works) and in other ways. Three chief processes indeed—that of wool-combing for making worsteds, and those of dyeing and finishing—cannot be thus subdivided: so they are generally remitted to specialized businesses and these have some opportunities for semi-monopolistic policies; as to which something more will be said a little later.

The cotton industry generally offers no special allurements to monopolistic enterprise: but yet Coats' business, entirely British, has an exceptional claim to be regarded as having cosmopolitan dominion. Its strength is based in great measure on Lancashire's advantages, both on the physical and the human side, for the apparently very simple tasks of making fine cotton yarn and converting it into thread: she combines indeed an admirable climate for the purpose, and unique manual skill and organization¹.

The simple art of making cotton yarn into a thread strong enough to take the place of silk and linen threads seems to have been set up early in the eighteenth century near Paisley. It quickly spread among humble folk; and, early in last century, two considerable firms were set up there to carry on the business: they soon united their forces, and they gradually absorbed nearly all their competitors. The great combination thus formed seems to have been managed with ability and

¹ This subject will be further considered in the next chapter.

III, xi, 6. moderation. Its trade-marks have immense value; because as has already been noted, the mischief done by using inferior sewing thread would often be immeasurably greater than the price of good thread; and the ordinary purchaser cannot judge its quality by inspection. It has definite working alliances with the only other great British thread business,—the English Sewing Cotton Company,—with the Fine Cotton Spinners' and Doublers' Association; and with the powerful American Thread Company. The "Thread Combine" thus formed is the outcome of consolidations of several groups of firms of moderate size, dominated in great measure by the giant businesses of Coats. It makes no immoderate use of its monopolistic power: but yet some of the measures by which it fortifies its monopoly are perhaps more harmful than appears at first sight: and we may pause a little to consider them¹.

Its home trade is very much smaller than its foreign trade; and it can use either part to assist the other financially and otherwise. It has factories in several countries; and in others it sometimes puts a stop to troublesome competition by a threat to set up factories of its own. Its excellent organization of production and marketing enables it to make vast profits, while selling at prices that leave no very large margin above the costs of a rival. It might then be supposed to be above the temptation to resort to any expedient which is open to criticism².

¹ See p. 403. The two great firms of Coats and Clark were fused early in last century: and other firms were subsequently absorbed; though many of them continued to work in partial independence. The task of marketing is committed to a powerful Selling Agency. It even undertakes the marketing of the English Sewing Cotton Company, whose products are similar to its own, though not generally in direct competition with them. The products of Lister and Co., though different in kind, appeal to the same retailers; and are also marketed by it.

² It commonly divides thirty per cent. on its ordinary shares: nearly half of its capital is in preferred shares at the almost unprecedented rate of twenty per cent. In defence of this result of course it might plead, that some other businesses are in effect yielding dividends on their original capital at very high rates: but have avoided the appearance of doing it, by enlarging their nominal capital. Its practice of retaining, on various sorts of threads, the names of many firms which have been absorbed by it, causes some consumers to suppose that they have a choice among the products of many competitive firms; and are thus protected. The Committee on Trusts, early in 1920 criticised its methods severely. Its vigorous answer suggests that further investigation may be unconstructive.

But in fact it makes use of a modified form of that "tying III, xi, 6. clause," which has been a prominent and most evil weapon of monopolistic power in America; and has been vigorously combated in the interests of the public. Coats' well-earned reputation for thorough and honest work has caused consumers to prefer its goods to others at equal prices: and therefore a firm which has not yet convinced the public that its goods are thoroughly to be trusted, is compelled to offer them at a rather lower price; being of course content with a lower rate of profits than that which is earned by Coats' goods. If the young firm could prove to the public that its goods are, at all events, so nearly on a level with Coats' products, that they are worth having when sold at a rather lower rate of profit, then it could gradually obtain a place in the market. But Coats refuse to supply any dealer who gives such a firm the chance of doing that; and this action seems to infringe the spirit of the Common Law, which prohibits the entrance to the highway of business from being blocked by a giant aggregation¹.

The name of Coats has dominated this mighty growth: but its case is exceptional. Nearly all the great aggregations in the textile industries have grown out of understandings, passing into federations, and ending in fusion. This general tendency has already been noted as especially strong in such industries as those of combing wool, and bleaching, dyeing and finishing textile materials². For each such operation requires generally but little time in the hands of a highly expert staff, equipped with large technical appliances: the market value of an expen-

¹ The Drapers' Chamber of Trade is said to insist on uniformity of retail prices. Perhaps they are right so far as their own interests are concerned, in spite of the fact that their profits on handling thread are naturally low relatively to those on most other branches of their trade. But the huge profits of the Coats' aggregation owe nothing to technical economies of massive production; and the Drapers' rule, which in effect obstructs the entrance to the industrial highway of firms, who might supply good thread made by the best appliances, being content with a lower rate of profits than that of Coats', is *prima facie* opposed to the public interest.

² See above, p. 232. But mere fusion, without thorough organization and strong centralized control, may bring disaster: as is shown by the strange story of the early days of the Calico Printers' Association. A strong Committee investigated its affairs; and made recommendations for its re-organization, which form a classical document. See Maurosty, *l.c.* pp. 144—152 and 360—387. More recently its career has been fairly successful. Its Chairman,

III, xi, 6. sive material is much affected by the efficiency with which it is performed; and textile manufacturers gain by paying to a central Association a price that may yield it a high profit, while being less than their own cost for doing the work themselves less efficiently. The tasks are too various to be easily brought under a standard price list by a federation: so they afford exceptionally favourable fields for giant amalgamations.

speaking on 15 September 1920, claimed that its powerful organization had obtained good results, especially in marketing at great distances. But he added that "the recent merging of the two principal firms of English colour makers into one highly capitalized corporation...was to the advantage of neither the colour-making nor the colour-consuming trades....Our objection has from the first been that any scheme aiming finally at the concentration of the dye-making works of the country into one monopolistic enterprise would, in practice, disorganize the working mechanism and *esprit de corps* of the firms amalgamated—it would increase the overhead working costs, stifle that healthy rivalry which is one of the main inducements to economical, efficient, and progressive working, and furnish the opportunity for price inflation irrespective of manufacturing costs. We are glad to note that our view is gaining a wider public recognition that the foundations of dye manufacture must be broadened if the maximum of efficiency in production is to be secured."

CHAPTER XII

AGGREGATION, FEDERATION, AND COOPERATION IN BRITISH INDUSTRY AND TRADE, CONTINUED

1. *Some British textile industries have developed efficient standardization and specialization almost automatically.* III, XII, 1.

The broadest, and in some respects most efficient forms of constructive cooperation are seen in a great industrial district where numerous specialized branches of industry have been welded almost automatically into an organic whole.

The preceding chapter was mainly occupied with the sources of the strength of some giant British businesses. The present chapter and the next will be chiefly devoted to various forms of cooperation, in which there is some constructive purpose; though the desire to get the better of others in buying or selling plays a considerable part in many of them, and develops a strong and even antisocial temper in a few of them. Associations for the purpose of marketing are known to be specially prone to such morbid development: and it is important to insist that they nearly always do some important constructive work; and often do no other. The last chapter will indicate the general bearings of the present work as a whole on the methods by which existing institutions may best be modified and applied for the harmonious development of the faculties of the people, and of their material advantages.

It will be well now to call to mind the facts that (1) the partial standardization effected by custom has effected much automatic organization of industry: (2) this organization included specialization, which in large measure dispensed with

III, XII, 1. the necessity of any complex arrangements in each individual business, since the *external* economies, which even a small business thus obtained, were generally far more important to it than those which the largest business in the world could obtain by its own efforts: (3) recent developments of standardization have greatly increased the security with which a business can rely on getting whatever partly finished materials it needs, provided the market for them is open: (4) German experience shows that the organization of a cartel is possible only in industries whose products are in great measure standardized; and that the fear that the prices of materials, which a business needs, may be artificially raised by cartels inclines it to extend its operations vertically, even when that course would not otherwise appear desirable¹.

Britain was indeed the chief home of the automatic co-operation of many industries; as it was also of the reasoned analysis of the "natural" tendency to such division and organization of labour as is needed to make it collectively efficient. "Observe the accommodation" says Adam Smith "of the most common artificer or day labourer; and you will find that the number of workers, who have contributed to it, amounts to many thousands²." In the present age industry is so complex and products are so subtle, that "hundreds of thousands" may be substituted for "thousands." And it may be added that almost every branch of industry in a western country depends directly or indirectly on hundreds, if not thousands of other branches, at home or abroad, for various parts of its plant and material. In one sense the whole world, in so far as it is in touch with western trade, is a single workshop: in a much fuller sense every compact industrial district is one.

The modern methods of massive manufacture were pioneered by the textile industries, chiefly using wool as their material: and their advances in automatic organization in England, especially during the seventeenth and eighteenth centuries, have already been studied³. We may now turn to Lancashire,

¹ References in connection with these four points are:—(1) pp. 196—200; (2) p. 167; (3) pp. 221—234; (4) pp. 547—549; and 557, 558.

² *Wealth of Nations*, Book I. ch. I.

³ Above, I, III, 5 and Appendix C, 4.

where may be seen perhaps the best present instance of concentrated organization mainly automatic. Nature had favoured Lancashire with good access to the sea, to coal and to iron; and also with a climate remarkably suited to the great cotton industry. Moreover the character of the population fitted them to develop the engineering industries. Thus makers and users of textile, and especially cotton, machinery have had nearly all the advantages of concentrated effort that could belong to a population of more than a million persons in a single composite business; while avoiding the cumbrous network of organization that would be required by it. Therefore dealers of various kinds flock to Manchester from all quarters of the globe; and they are able, by aid of motor cars, to enter into direct contact with makers of innumerable specialities spread over an area of some two hundred square miles¹. III, xii, 1.

It is generally recognized that the chief economy in production, as distinguished from marketing, that can be effected by a cartel or other association of producers, is that of so parcelling out the demand for various sorts of the same class of product that each business can specialize its plant on a narrow range of work, and yet keep it running with but little interruption. This specialization is however thoroughly effected without conscious effort in the Lancashire cotton industry; and especially in those branches of it, which are mainly in the hands of a multitude of independent businesses of moderate size. As is well known, fine spinning, coarse spinning, and weaving are localized separately. Individual firms frequently specialize on a narrow range of counts for spinning. Blackburn, Preston, Nelson and Oldham are centres of four different classes of staple cotton cloths, and so on².

¹ As is set out more fully above, p. 286; see also p. 50.

² Fuller details are given by Chapman, *Lancashire Cotton Industry*. See also the *Report of a Departmental Committee, appointed by the Board of Trade, to consider the position of the textile industries after the war* [Cd. 9070], 1918, pp. 49, 50.

That Committee is one of several appointed during the pressure of the war, which cover between them the greater part of the chief industries of the country. They are of the very highest authority on the technical matters, with which they are severally concerned: and of exceptional value to economists. But, when regarded from the broader point of view of the collective interests of the nation, they necessarily lack the safeguards which would have been supplied if

III, XII, 1. It has often been remarked that, when any branch of an industry is greatly in advance of foreign competitors, it has nearly as full opportunity to organize itself deliberately, and ultimately to pursue a monopolistic policy, as if it were privileged by a Protective tariff; the case of high-class wall papers is in point. But automatic organization has predominated in the British textiles, and especially in the cotton industry which "by reason of its magnitude and the extent to which specialization has been carried, is probably the most efficient distributing organization in the world": though it is admitted that the alertness, assiduity and knowledge of foreign languages possessed by Germans have given them a large place in this British task. It is admitted also that the minor textile industries often adopt wasteful methods of marketing: and would gain by the adoption of "some form of combined representation, or cooperative selling¹."

Trusting almost exclusively to automatic organization the British cotton industry has surpassed all its rivals in size and

the ordinary practice in times of peace had been possible during the war. For then the doors would have been open to duly qualified witnesses, who might desire to offer supplementary or rebutting evidence to some that had already been given (see above, p. 443). That practice seems to be the only thorough safeguard against such developments of bureaucratic control, sometimes under the influence of particular sectional interests, as are specially dangerous in a democratic country, such as Britain is rapidly becoming. A partial safeguard—the best perhaps that was possible during the war—was provided by a strong "Committee on industrial and commercial policy after the war," on which the several special committees were represented; thus providing for the harmonious treatment of their several interests. But those interests in the aggregate are but a part of the interests of the nation as a whole. It often happens that national interests receive more careful attention in Minority Reports, (or Reservations) than in Majority Reports: for the Majority of a Commission or a Committee are generally chosen for their special knowledge of the matter in question: and they are therefore not always in a position to be wholly impartial.

¹ The marketing of cotton goods generally is highly specialized. The "shipper" concerns himself with external trade: "he not only forms connections in various parts of the world for distributing his yarns or goods; but he finances and conducts these goods through their various processes." That is, he buys goods, has them inspected, and sends them out to be dyed and finished on commission. The majority of shippers specialize on markets: as for instance the Eastern, the South American, or the Levant. Yarn and grey cloth are now increasingly intrusted to special agents; who represent a number of mills and thus "enable the producer to devote his time almost entirely to works management and purely industrial questions." (See the *Report on Textiles after the War*, pp. 117 and 50.)

in efficiency. In fact, in those finer goods, which owe most to skill and admit of the highest rates of remuneration to labour, it is without a rival. Nor are the woollen and worsted industries of Yorkshire very much behind the cotton of Lancashire: they have indeed many strong rivals in the coarser qualities, and they often follow the lead of Paris in fashion goods; but the most highly valued cloths for men's attire can be made only in Britain. The high automatic organization of these industries, as of the cotton industries, is in great measure due to the fact that their plant is made in their own districts, with constant intercommunication of ideas between machine makers and machine users. Nearly the whole of it is of British invention, and sought for by rival industries in other countries. On the other hand the silk industry, for which the damp British climate is not well suited, is on too small a scale, to be well organized automatically. Its machinery is said to lag rather behind the best practice of some other countries; and it is inclined therefore to look for artificial aid. Nearly the same may be said of several other minor textile industries¹. III, xi, 2

2. *Constructive cooperation among kindred businesses, whether independent, or in single ownership and under central control.*

We have seen several reasons for thinking that a giant business in strong hands may do more for the advancement of technique, than is usually done by a number of small businesses with an equal aggregate output; but that on the other hand the giant business does, as a rule, comparatively little to educate high creative faculty: and that, though it has exceptional facilities for marketing, much of the most highly organized and effective marketing in the world is an almost automatic result of the work of a multitude of producers, with only moderate capitals, but aided by merchants and other dealers of various sorts. In the present Section, we are to consider some kinds of associated action, which claim, in effect, to unite some of the advantages of these two tendencies of industry: after-

¹ The relations between standardization and specialization in textile and in boot and shoe industries have been discussed from another point of view above, pp. 229—234.

III, XII, 2. wards we shall pass to methods of associated marketing by businesses which preserve complete independence as regards production; but unite their forces in various degrees for various purposes of marketing, some of which are militant and res-
sistive.

We may begin with an instance of pure constructive co-
 operation, without any apparent drift, to use it as a means of
 maintaining prices at higher levels, than would otherwise prevail.
 The British Pottery Manufacturers' Association has among its
 purposes "to deal with the quality, supply, purchase, and control
 of raw materials and stores, where desirable, in the interests of
 the members; to deal with all questions relative to cost and
 conditions of transport; to consider means of facilitating the
 extension of export trade; to bring about closer cooperation with
 the technical arts, and designs sections of the pottery schools,
 to promote general propaganda, and to undertake advertising in
 connexion with the industry; to consider the best means of
 encouraging and utilizing improvements, inventions, and patents
 for the general good and advancement of the industry; to deal
 with all matters connected with more economical production,
 including costing; to watch national and local legislation affect-
 ing the industry....Experts are to be appointed, and assistance
 given to members in overcoming the technical difficulties which
 constantly arise in so complex an industry; and the Federation
 has power to purchase, work, and exploit any patents, secret
 processes, or other improvements in the general interests of the
 members¹."

Cooperative action in this instance does not seem to involve
 centralized control: but it must be admitted that the greater
 part of such action derives its chief coherent force from a cash
 nexus; in the form either of association for the regulation of
 prices, or of consolidated ownership. And yet mere associations
 for the regulation of prices seldom have much constructive in-
 fluence: their main energies are given to preventing sales of

¹ "To give effect to this extensive scheme, the following Committees, besides
 General Purposes and Advisory Committees, are being set up:—Wages and Con-
 ciliation; Supply and Purchasing; Oven, Kiln, and Sagger; Transportation;
 Advertising and Propaganda; Machinery and Milling; Arts and Designs; General
 Research; Patents, Inventions, and Improvements; and Commercial Intelligence
 and Statistical." From the *Trade Supplement to the Times*, December, 1918.

certain classes of goods at prices which they regard as unsatisfactory; and they work, not so much for an increase of national wealth as for a distribution of it specially favourable to themselves. III, xii, 2

When the importance of "the personal element" on business organization was under discussion, attention was called to the far-reaching influence of a single masterful mind, making itself felt through well-chosen chiefs of departments¹. But industry, in passing from the nineteenth to the twentieth century, entered on a phase, in which its aggregations became too massive to be easily mastered by a single man, even in a country as open to new developments as is the United States: and Mr Carnegie, a dominant example of such a mastery, handed over his heavy burden to the United States Steel Corporation. There is less cohesion in the British steel industry; and other industries will afford illustrations better suited to our purpose².

The Bradford Dyers' Association is fairly representative. Its business is that of dyeing on commission the products of those textile industries of which Bradford is the centre: so its policy is not troubled by problems of marketing. It cannot indeed claim very much of one economy, which is important in the work of some similar associations—that of saving cross freights by directing each customer to the factory most suitable for his purpose: but this is a small point. It gives each of its members freedom and responsibility in the management of details; while it collects into its own body a strong force of high business faculty for organizing the whole and for directing the broad policy of each branch. In regard to technical matters, it delegates all difficult questions to a capable scientific staff. It provides a uniform system of costing for all the branches; and it buys in large quantities well and cheaply by means of a strong special staff. This may be taken as a fair representative of the methods of industrial associations, whose main purpose is constructive³.

¹ See above, pp. 362—364, especially the footnote on p. 364.

² Notable fusions in the British steel industry are associated with the names of Armstrong; Vickers; John Brown; Dorman and Long; Palmer and others.

³ Constructive cooperation in the improvement of methods takes many

III, XII, 2. But all such Associations have to face a dilemma: on the one hand, if the staff of each business, or department owned by it, are paid fixed salaries, they may be found lacking in energetic enterprise; and the case is not much better if their remuneration varies a little with the net profits of the Association. If on the other hand, accounts are kept of the profits made on their own work, and their salaries are varied in accordance with those profits; no direct incentive is given to energetic cooperation for the efficiency and prosperity of the whole. A solution of this difficulty seems to have been found in the plan of the Calico Printers' Association; under which the "commission," or other bonus, allotted to each business, is made to depend not simply on the net profit shown by its own working during the year; but on that in conjunction with the net profit of the Association as a whole. This plan claims to encourage alert enterprise, while discouraging any policy of a branch, which might be detrimental to other branches. Uniform costing accounts can be made a means of indicating relative inefficiency, and stimulating enterprise; especially when several businesses in the Association are engaged on the same kind of work. For a statement of either the minimum, or the average, cost of each process, circulated by the Central Control among the members will stimulate any, whose costs are rather high, to amend their ways.

Closely akin to this device is the cooperative dissemination throughout all members of an Association, by the Central Control or otherwise, of information as to improved methods, and even distinct inventions, that have been worked out by any of its members. In so far as this community of property in progress merely brings to the more backward members a practical

forms. Thus skilled technical staffs are kept for this purpose by The British Portland Cement Manufacturers; by The United Alkali Company; by Lever Brothers, and by many others, in whose work science plays an important rôle. And similar provision is made, where the work is mainly mechanical. Thus the Fines Cotton Spinners' and Doublers' Association keeps special experts for dealing with every part of a cotton spinning mill, who are too expensive to be employed by a single firm; but are in effect available for all. The Bedstead Makers' Federation induces its members to assist one another's works by communications for the purposes of comparing, criticizing and improving; and so on. This constructive work must be recognized as socially beneficial, even in those cases in which it is combined with an antisocial price policy.

acquaintance with the best technique that prevails in the industry concerned, its effects are wholly good. But though the heads of an independent business may be willing to spend toilsome days and anxious nights in developing an idea, which holds out some promise of greatly raising its status: yet the same men may be rather supine in such matters, if they know that the honour and reward, which may result from their exertions, will belong to the Association as a whole. In short, an Association is an admirable agent for the dissemination of knowledge of technique, and even for its advancement, in so far as that can be done by "team-work": but the spread of Associations over a country might dry up many of the sources of truly original invention. This danger is partly avoided by arrangements which seem to be adopted by the Cable Makers' Association: any member, who makes a distinct advance in technique, is allowed to have the sole benefit of it for a time; or, as an alternative, other members (but no businesses outside the Association) are permitted to use it on terms advantageous to the inventor. It is possible that German competition, as well as German suggestion, is in some small measure responsible for some developments such as that of "The Sheffield Cutlery Trades' Technical Society." Electrical manufacturers in their private capacity, and through their Association, are furthering the development of the sciences, in which they are specially interested, by educational endowments and otherwise; and so on.

As time goes on, such Associations may probably develop many-sided constructive functions in regard to technique; especially in connection with the applications of "Scientific Method" to broad problems of standardization, and costing. Here American guidance comes to the front; and indicates that no correct measure of costs can be got by mere inspection of a particular operation performed under given conditions, taken in connection with the rate of payment of the operatives concerned. That measure is well enough for the short run; but, in the long run, the cost of the operation to the employer will be in great measure governed by its cost to the employee; that is, by the fatigue caused by it. To make such studies much time and thought on the part of able men are needed; and the results are a valuable property to the whole industry concerned. There-

III, XII, 2

UI, XII, 2. fore they may best be undertaken by an Association; and the broader the scope of that Association the better¹.

Similar considerations emphasize the importance of a great design to set up a single vast "Association for scientific research in relation to cotton and the cotton industry"; which may be the forerunner of far-reaching changes in Britain's industrial structure. For it aims directly and exclusively at enabling the country to do a large part of her work better and less wastefully than she otherwise would do: it has no design of enabling one section of the nation to get the better of others in bargaining².

Throughout this volume reference has frequently been made to the need of associated action in regard to the applications of science to industry. The dye industries stand at the head of this account: glass and metal industries come not far behind. There are a few occasions on which the State may properly intervene directly; and the aid which it has given to the formation of the colossal "British Dyestuffs Corporation" seems a strong instance of this: but in more leisured times careful study will need to be paid to some questions connected with such a policy. For if public assistance is given to a private corporation in acquiring special knowledge, which has a high pecuniary

¹ Here reference may be made to *Efficiency Methods* by McKillop, recently published, which gives, in compressed form, an account of scientific management suitable to English conditions.

² Although it is not yet fully set up, a little may be said about its scheme. Stress is laid on the facts that England's lead in the industry resulted from concentrated original thought, making use of what little aid could be got from the science of the time; but that latterly scarcely any great creative idea has appeared in the industry; though the progress of science has suggested many questions, the solution of which might render great service. A thorough study of such questions would involve very great expense: and, without neglecting the aid that can be got from Universities and other national resources, a fitting scope is offered for large scientific enterprise on the part of the British Cotton industry, including "growers, spinners, manufacturers, dyers, bleachers, printers, finishers and merchants." It is to collect reports of appropriate scientific work throughout the world; and to set out the results in forms adapted for use by the industry. It is gradually to develop its own Research Institute: and it is to foster solid methods of education in the cotton districts. It is to be strictly "cooperative," in that all will contribute for the general good. None will seek any exclusive advantage for himself; and its purview is so broad, that it may probably develop (with whatever aid can be got from academic laboratories) a full study of the mechanical, physiological, and psychological elements of strain in every important operation of the industry. See also p. 597 n.

value, some provision must be made for securing that all, who III, XII, 3. desire it, shall obtain access to that knowledge on reasonable conditions. This matter is difficult, because competitive industries in other countries might endeavour by various means to obtain it for their own use, without giving anything in return: and yet no sufficient provision for the avoidance of undue discrimination would be afforded by the rule that the corporation should be prepared to absorb any considerable business that desired to have access to its results.

This is indeed but one side of a difficulty, which the world has in part outgrown, and may outgrow altogether. Even now science is so far cosmopolitan, that progress, made anywhere, quickly becomes the basis of new advances everywhere. And it is possible that scientific industries might advance all the more rapidly, if an international agreement were reached to the effect that every State should endow research for the purposes of industry, in proportion to its industrial strength: and provide that all knowledge to which its aid contributes, shall become public at once. A league of all nations for such purposes might aid in the building up of a wide international comity¹.

3. *Some minor functions of producers' associations.*

Automatic organization is still the chief origin of standardization of product, specialization of task, and the advancement of knowledge in relation to industry; and indeed its action becomes ever stronger and more rapid. But yet its influence is being increasingly overshadowed by those of far-reaching forethought and carefully planned organization. A good instance for our present purpose is that of cost-accounts.

Truly scientific cost-accounts are indeed not yet in sight: no near approach to them can be made by any slight effort; and they are not likely to be attained save by several generations of hard work. But the rate of progress has been much increased

¹ In regard to public institutions for this purpose in Britain reference may be made (partly on the basis of Benn's *Trade as a Science*, p. 132) to the National Physical Laboratory, the Leather Sellers' College, the Imperial College at Kenington, and the proposed Institute of Technical Optics at Clerkenwell. Staffordshire has her Design and Industries Association, and Manchester her School of Technology; Leeds and Bradford make special provision for the Woollen Industries; and so on. This incomplete list may probably be more than doubled in a few years. See also above, pp. 99—102, and 131—135.

III, XII, 3. by the prominence, which the financial unity of many semi-independent businesses under a central control has given to flagrant diversities among the methods of cost-reckoning, that are to be found even in similar businesses¹.

Another direction in which producers' associations are likely to work for the public good is that of reducing unreasonable additions by traders to the prices which producers receive. Many of the services rendered by middlemen are of vital importance, and are fully worth the costs incurred for them: but in some cases, the number of middlemen is in excess of the real requirements of their work: and they earn goodly incomes by large additions to the prices of comparatively small quantities of goods that pass through their hands. Then there is need for a remedy; and none can apply it so well or so thoroughly as an association of producers: but this power gives large opportunities for action, which benefits particular sections of the nation at the expense of others; and thus is often the more dangerous to public welfare, the more attractive it is to those who wield it: to this matter we now pass².

¹ This is an instance of the rule that the progress of knowledge must generally wait on an extension of conscious ignorance. (See above, II, XI, 1; also Appendix A, 1.) The Ministry of Munitions has had unusual opportunities for comparing, contrasting, and improving the methods of cost-accounts.

It is well known that no method of cost-accounts can be perfectly adapted to all industries nor even to all businesses in the same industry. But the advantages of uniformity in this matter are so great that it might be well to set up officially several standard methods, indicated perhaps by the letters A, B, C, etc. Each such method might have several minor variations, properly numbered in regard to specific points: the chief of these might be the methods of distribution of particular items of general, or overhead, costs among particular products. Such an order having been set up by Government or by other means, investigations for the purpose of assessing income tax etc. would be facilitated by a statement of the particular standard method employed, and of any minor variations as to specific points. The Industrial Reconstruction Council has already issued an able and helpful paper by Mr M. Webster Jenkinson on *The Workers' Interest in Costing*: and the Federation of British Industries is rendering excellent service to the country by its work towards a consistent system of cost-accounts for general use.

² It is known for instance that the prices, which makers of wall-papers receive from merchants, have sometimes been doubled before they reach the decorators; and doubled again when sold to the public. Of course wall-papers come in varying degrees under the class of fashion and fancy goods, in regard to which the profit on the turnover must be very high (see above, pp. 281-2). The enormous additions, which are made to the prices of fish received by the fishermen, are sometimes attributed to effective combinations among a larger

4. *Associations of producers for constructive work in marketing; especially in connection with export trade.* III, XII, 4.

The business of marketing in the present age differs from that of earlier times chiefly in matters of detail: though the business of production has been for the greater part so revolutionized as to be almost unintelligible to an able industrialist, even of the eighteenth century, if he could come to life again. But the slowness of progress of marketing has increased its apparent relative "importance," when that is measured by the amount of occupation which it affords to the population. The new age has set mechanical power to do most of the hard work of production. But the burden of marketing must still be borne mainly by men: and the present tendency of associated effort to become broader, and to reach further, in marketing, than in making, is in great measure the result of natural causes¹.

(So compelling are the present developments of technique, and the intensity of international competition, that prudence, as well as courage, calls for freedom for all kinds of association that can render important services, even though they are liable to be turned to evil account.) But the larger that freedom, the more urgent are the duties of students to examine, and of Authority to control probable abuses of the opportunities offered by it: and these abuses are more closely connected generally with the operations of marketing, than of production. This need for caution seems to be recognized in the guarded statement of the Committee on commercial and industrial policy after the war, that "It is very desirable that in all important British

number of intermediaries than the trade really requires. The time is not ripe for agreements among fishermen to sell only to traders, who would undertake to keep prices to retailers and to the public at reasonable amounts: but such tasks may not prove too heavy for a later age. Reference may again be made to some details of marketing discussed in Appendix J.

¹ The chief influences of modern technique on the methods of marketing have come through the printing press, through rapid transport, and through long distance communications by telegraph and telephone.

It is true that in earlier times a large part of the population spent some time in marketing; but nearly every small trader made most of the things which he sold; and was in fact a producer rather than a trader. That habit has few survivals now: few traders produce any considerable part of what they sell. A generation ago the baker differed from most other shopkeepers in selling chiefly his own products: but even he is now often merely a trader, selling wares made in a huge factory.

III, XII, 4. industries there should exist strong, comprehensive, and well organized associations, which should be clearing-houses of information of common interest, and should be competent to voice the opinions and the needs of their respective trades as a whole¹."

Some of these purposes are served fairly well by Chambers of Commerce, especially such as represent the homes of definitely localized industries: and larger problems of industry find their place among the manifold affairs of Chambers, when meeting in Association. But there yet remain great gaps in the work to be done: and accordingly the "Federation of British industries" has set itself to promote the formation of representative Associations for particular industries; "to collect them and their leading members into a central federation for dealing with matters of common interest to all industries, and for mutual support"; to allot to each industry or trade a duly proportionate "voice in the discussion and decision of questions of common interest"; and thus to give effective "assistance in the promotion and development of British trade." The groups, which it represents, include the greater part of the adult population, but they do not include all. Nearly every group and sub-group, included in it, has direct interests in promoting the importation of some products, and is apt to be more or less jealous of the importation of others: but that considerable part of the adult population, which is not included, has seldom any direct reason for such jealousy: and yet the chief burden of the wastes caused by jealousies among the various groups of producers and traders falls ultimately on that large non-vocal group².

Britain's industries have a larger concern than those of any other country in external trade: and a special interest attaches to the work of Associations of her producers for organizing the direct sale of their goods through their own agents. The work is primarily constructive; though it may develop militant tendencies to meet the competition of rival exporters from other industrial countries.

¹ [Cd. 9035], 1918, p. 35.

² The Federation aims at developing the efficiency of each group; at smoothing away any frictions that may arise among groups, or perhaps sub-groups; at supplying to Government wise and well-balanced advice in regard to its choice of representatives of particular groups; and in other ways of national importance.

Not long ago Britain's exports, like those of other countries, III, XII, 4 were in the main sold at chief ports, or other cities, to local traders, who marketed them in detail: and her imports were bought chiefly at similar centres. But now improvements in the internal communications of even backward countries enable an enterprising British or German merchant, or an agent of a manufacturing business, to penetrate far into the interior. So energetic are the tentacles of trade which each great industrial country is throwing out, that no one can long hold his own if he neglects opportunities that are thus open to all: and therefore the importer must seek to sell his goods ever nearer to the ultimate consumer; and the importer must seek to buy his raw products ever nearer to the original producer. Meanwhile international competition develops in backward countries; as well as in those where competition has always been active; and the trader must be increasingly alert to meet rivals who bring to bear in the competition a more thoroughly organized energy and a larger capitalistic force than were often met in earlier times. He must even be on his guard against oblique strategy¹.

Accordingly America's Federal Trade Commission suggests that cooperation in her export trade is needed to meet the competition organized by the six hundred German cartels; and by associations of manufacturers in various British industries designed "to handle their business in certain important markets, and to carry on an aggressive campaign for its extension....It is against such organizations as these, uniting powerful groups of foreign concerns, backed by great banks and aided by railway and ship lines, and assisted by foreign Governments, that hundreds of comparatively small manufacturers and producers must compete if they engage in export trade²." Therefore the

¹ This may be illustrated by an extreme instance. When the great war broke out, a German advertising agency had bought the sole control of the advertising space in eighty-one principal Italian newspapers; together with the right to veto, without reason given, any announcement in the news columns which might be disagreeable to it. Such warfare cannot be met by an individual producer or trader; but it may be in great measure met ultimately by organized efforts on the part of all industrial countries; and then all of them will be a little poorer than if the warfare had never begun. (See *Times, Trade Supplement*, September, 1918, p. 136.)

² *Report on cooperation in American Export Trade*, Part I, pp. 5, 6. See also an article on "Export problems and American foreign trade policy," by William Notz, in *The Journal of Political Economy*, February, 1918.

III, XII, 4. Commission, while repressing all competition within the United States, which "restrains trade, substantially lessens competition, or tends to create a monopoly"; yet recognizes that a strict enforcement of this principle on American traders might be oppressive, when they meet the assaults of German and other competitors, whose methods are unrestrained. It therefore proposes "to allow American firms to cooperate for export and to permit the use of certain methods abroad, which are legal in foreign countries, but are not permitted in the United States." It urges that the tasks required in the export trade are often too heavy to be borne by individual producers; while merchants may lack the technical knowledge and special interest needed for making the most of goods that lie outside of the ordinary course of trade. Cooperative organizations "can afford to advertise, to study foreign demands and customs, to make demonstrations,—to collect credit information, and to extend credit¹."

These considerations tend to show that, if a business desires to extend its export trade, and is for any reason not content with the services rendered to it by merchants, it has a strong claim to be allowed to unite with others in like position in a Federation for the purpose; and that a relatively free hand may be allowed to the Federation.

An agent appointed to control the export trade of a giant business in a large market has some exceptional advantages. He can have a thorough technical knowledge both of the goods which he handles, and of the requirements and tastes of local traders and consumers in regard to them. He can recommend that certain goods be offered, temporarily at least, at prices that

¹ Accordingly Congress passed in 1918 an Act ordaining that existing laws "shall not be construed as declaring to be illegal an association entered into for the sole purpose of engaging in export trade,"...provided its effect "is not in restraint of trade within the United States, and is not in restraint of the export trade of any domestic competitor of such association...and does not intentionally enhance or depress prices within the United States of commodities of the class exported by it, or substantially lessen competition." It orders that when the Commission "has reason to believe that any association violates the Act, it shall require its officers to appear before the Commission; and, after investigation, to issue appropriate recommendations." If they are not adopted, the matter is to be referred to the Attorney-General for "such action thereon as he may think proper." These details are given, because they suggest lines on which Britain may find it advisable to move in the near future.

do little more than cover costs; on the ground that, though they have not yet attracted the attention of his market, they are likely to obtain a strong position there, when their use has become familiar: and so on. But even a giant business cannot afford to have a strong representative in every overseas market. III, XII, 4.

A great association of producers may however maintain a number of competent agents; though they indeed will not always have an intimate knowledge of each of the various products committed to them. But, much friction is caused when an agent of an association is found to have sold a larger proportion of goods supplied by one member of it, than of similar goods supplied by another. Even the tireless assiduity of German cartels has not fully overcome this difficulty, except in regard to simple half-products, so completely standardized, that a Syndicate can become the owner of the whole output of its members; and, after selling that in different markets at such prices as seem best to it, can divide out the net proceeds *pro rata*.

But several partial solutions of the difficulty are now on trial. For instance, in the Engineering industry, some small companies have been set up by particular groups of manufacturers, for the purpose of pushing some of their wares in particular countries; the selection being so made that none of the goods handled by any one are competitive: each manufacturer can give his own instructions as to the prices to be asked for the goods. The home manufacturer has to give credit: the companies "have not adopted the system of merchant houses of paying for the goods¹."

A bold extension of this plan appears in the setting up of a vast central Association, which is to appoint an "Agent-in-Charge" of each important overseas district: he is to assign to particular agents under his control the care for certain products of particular members of the Association; subject to the condition that no one agent is responsible for two products which compete with one another. On that plan each manufacturer can issue what instructions he likes as to his own goods².

¹ *Report on the engineering trades* [Cd 9073], p. 19.

² This is the plan of the "British Manufacturers' Corporation," recently founded by Sir Charles Mandelberg. "The Agent-in-Charge in each country must necessarily be British, and possessed of commercial experience and

III, XII, 5. ✓ Meanwhile trade between Britain and her overseas kindred is being fostered by "Trade Commissioners," each of whom has the duty of keeping British producers and exporters in touch with the conditions of that part of the Empire, to which he is assigned. This important work has a broader, but perhaps less penetrating and thorough influence, than the intensive methods which we have been considering¹.

5. *The strength of the semi-automatic organization of export trade by independent merchants: functions of banks in relation to the trade.*

Large as are the tasks which may be accomplished by Associations of manufacturers, or other producers in developing export trade, room will probably continue to be found for the services of the merchant in organizing and financing it: the merchant may have done in the past much that should have been done by the producer; but there seems some danger that the pendulum, which has swung too far in one direction, may swing too far in the opposite.

knowledge of the language and trading customs acquired by previous residence. Of high commercial standing, his position and prestige would give him influence in checking chicanery, securing the best selling agents for exclusively British goods, commanding the best legal services for members of the Corporation, and obtaining advanced news of likely trade openings." He would have a considerable staff: and he "would recommend and appoint selling agents for members when desired, either for single firms, groups, or combinations, so arranging that competing firms would not be represented by the same agent. After appointment, selling agents and manufacturers would conduct their business direct, the Agent-in-Charge only intervening in emergencies, power of attorney being given to him to act in disputes." Thus every manufacturer "would be put into a position for getting into direct touch with his foreign customers. He would get to know their precise needs on the one hand, and, on the other, he would be able to put before them his entire range of products." While these remarks were passing through the press, it was announced that this Corporation had been fused with the Federation of British Industries; see above, p. 612.

¹ "A Trade Commissioner stationed in any Dominion or Colony, and responsible for a particular area, has to make himself fully conversant with:— (1) The Business Houses trading in his area, as well as the local manufacturers and public bodies. (2) The quantity and value that the country purchases of articles which the British manufacturer and merchant can supply. (3) The tariff and customs regulations for goods entering the country. (4) The foreign goods competing with British, their method of sale, their character and price. (5) Freight and charges and the comparative rates between British ports and foreign ports serving his area." (*The Board of Trade Journal*, April, 1918.)

A great merchant is likely to be a man of larger capacity than is generally to be found among salaried officers of a corporation. The variety of his operations gives opportunity for a broad study of character and conditions, and is of especial use in the difficult and important task of deciding where credit may safely be given: while the knowledge, obtained in each class of his many-sided dealings, serves him in others. He works for gain: but he generally benefits his country. His personal connections, as well as his patriotism, incline him to give preference to home goods, other things being nearly equal. If British producers fall in any respect behind their competitors, it is in their own interest, and that of the country, that they should be warned to bestir themselves. There are nearly always some producers who are capable: the merchant is specially able to select them; and, by so doing, he advances the industry to which they belong: an alert and wise use of his discretion may in the long run be of even greater benefit to his country than to himself. No doubt he sometimes selects products of some country other than his own, as the best suited for his purpose: but he is not very likely to do that, unless the corresponding industry in his own country is either not yet fully developed, or somewhat somnolent, and in need of a hint to amend its ways. It is however true that a special agent may be expected to send home some account of the reasons for any preference shown to rival goods; and a merchant seldom does as much.

It is to be remembered that the modern age calls increasingly for the concentration of thought, as well as of plant, on relatively narrow ranges of thorough specialized work: and there is therefore a certain presumption in favour of the relegation by the producer to the merchant of as much of the work of marketing as possible. Any reverse movement at the present time needs to be supported by very strong arguments; and it is to be noted that both German cartels and American giant businesses delegate as much of the work of detailed marketing as is practicable to semi-independent corporations or dealers: also that the merchants that act for German cartels are often themselves cartellized. Also the multiplication of Associations of business men must increase the time which they divert from action to talking and hearing others talk: it often happens that

III, XII, 5. the least progressive of them find most leisure for talk, and exercise an undue influence thereby. The British habit of concentrating the day's work into a few hours of high strain increases the evil, that arises everywhere from frequent attendance at meetings, which must necessarily be long¹.

It is to be noted also that the merchant supplies a part of the capital, needed to "carry" produce on its way to the ultimate purchaser: and that he has special facilities for supplementing his own resources. It is true that the producers, as well as the merchants can draw command over capital from Lombard Street for the purpose of financing some classes of their export trade: but that course is not always available in regard to goods sent to a producer's agents in distant lands for sale there².

On the whole we may perhaps conclude that there are many cases, in which agents of a producers' association may market abroad particular classes of goods with more intimate technical knowledge, and perhaps with more assiduity than are generally to be found in the independent merchant: but that yet the advancement of a country's export trade must in the main depend on his judgment and enterprise.

British banks serve the common interest by drawing command over capital from branches in residentiary districts, and

¹ In one important case this delegation has led to an increase of concentration. For the United States Steel Corporation, having set up a huge corporation, "Steel Products," to market its products, went further, to invite independent steel works to use its services. They have generally adopted this suggestion; and nearly the whole of America's steel output is sold through a single channel. The immediate economy and efficiency of the plan are obvious; but time alone can show whether it is free from latent disadvantage.

As to German practice, the *Report on Cooperation in the American export trade* (Part I, pp. 98—114 and Part II, pp. 3—89) is exceptionally full of suggestive information. In many cases the merchants, or associations of merchants, through whom the sales are effected, are so tied down by regulations as to the additions made by them to the prices at which the cartels hand over goods to them that they may almost be regarded as agents of the cartels.

² Of course a merchant, who stocks goods on a large scale, may sometimes set his own brand on them: but producers admit that he tends to steady the market by absorbing goods, when other demands are slack; while he can deliver more quickly than the manufacturers can do unless they keep large stocks themselves. Again he sends them larger and more regular orders than they might otherwise obtain, and saves them a vast amount of detailed work, which might hinder the application of their energies to that work which specially belongs to them.

lending it out in manufacturing districts; and the requirements III, xii, 5. of the export trade reinforce suggestions already made (see above, II, ix), in regard to the interests which the public has in the extension of the scope of work of British banks. While those services, to which they devote most of their strength, are of unapproached excellence, they make little attempt to rival German, or even American banks in the direct furtherance of the larger ventures of industry. By limiting their operations to a multitude of relatively small risks, they are enabled to base their advances chiefly on capital deposited with them; and therefore to return extremely high dividends on relatively small paid-up capitals. There are therefore some strong arguments, both of equity and of national advantage, in favour of the exertion of a slight pressure on them, by legislation or otherwise, tending to increase the ratio which their paid-up capitals bear to their total liabilities. They could then, with safety to themselves and their depositors, undertake a rather greater share than they do now of the larger responsibilities of the country's business abroad, as well as at home, while they would still cover so great a part of their liabilities by fluid assets, as to be certain of the ability to meet promptly further larger demands that might be made on them.

Like many German and other great banks, they might thus be inclined to hold on their directorates, or in their employment, a considerable number of men in the early prime of life. Each would select such as had direct knowledge of those matters of industry or trade, to which it was devoting special attention; and would require them to give at all events the greater part of their time to the work, in return for commensurate remuneration by salary or otherwise¹.

¹ Sir Charles Addis, in a notable article in the *Edinburgh Review*, July, 1918, points out that a mere technical expert would not be in place on the Board, but should advise financiers on the technical side of a project. He indicates that some German banks are burdened by undigested securities through having neglected this caution.

He remarks that the London floating loan market averages £m 300 of bills under discount, together with £m.100 lodged by bill brokers with banks as security against loans: and that the variety, extent and elasticity of its resources are without a parallel elsewhere. And yet it is over-susceptible: because too large a part of those resources belong to its customers, and too little to its owners.

CHAPTER XIII

AGGREGATION, FEDERATION, AND COOPERATION IN BRITISH INDUSTRY AND TRADE, CONTINUED

III, XIII, 1. 1. *The regulation of prices by associations of producers.*

It has already been argued (above, II, II, 4) that there is little fundamental difference between sellers' monopolies, and buyers' monopolies: that in many cases a mere change of wording will enable what is commonly regarded as a sellers' monopoly to appear as a buyers' monopoly; and that, even where this cannot be done, there is no general principle by which it can be decided whether a sellers' or a buyers' monopoly is likely to be the stronger. A federation of producing businesses is often a monopolistic seller of products; and, though more rarely, a monopolistic buyer of materials or of plant¹.

These considerations suggest that many of the most important applications of the principles, to be discussed in this chapter, relate to the "marketing" of labour and of employment, rather than of material goods: but their study must be postponed to another occasion; because the various elements, and especially the "human" elements, which enter into them, are large and various. It may however be well to note at once that the class-selfishness to which some capitalist-producers are tempted when they see the way to raising prices by associated

¹ It may appear as a monopolistic buyer of skilled labour of a certain sort: but when the labour required in an industry is of a highly specialized kind, while the plant available is more than adequate for the existing stock of that labour, an association of workers may have the upper hand as a monopoly of sellers. If the bargain be regarded as one for the purchase of employment, instead of for the sale of labour, the workers become the buyers; but the essential features of their monopoly are unchanged.

action against other producers, and ultimately against the general public, sometimes does more harm through its indirect than through its direct results. For trades unionists often understand the matter better than the public does; and in consequence are less willing than they otherwise might be to forego a strategic advantage in response to a plea that it would cause more hurt to the nation than benefit to themselves. Conversely, employers' associations for the regulation of wages have sometimes been turned to account for antisocial regulation of prices. Concerted action, on the lines of the *Whitley Report*, as to which a little will be said soon, will probably work for good in these matters, though it is not without its dangers.

The main principles of cartel-like associations have been discussed in Chapters IX and X; and what has to be said now, turns chiefly on differences between the German and the British peoples in character and in methods of organization. British associations, or cartels, are less under the influence of military discipline, and generally less harsh in their methods than German: but, as we shall see, their task is increased by the presence of many old firms with inherited plant and traditions.

The relatively mild policy of British steel Associations gave great freedom to each business to choose its own lines of development. While such powerful and enterprising businesses as those of Armstrong and Vickers were content to buy the steel on which they worked, there was no over-mastering advantage in deep vertical expansion similar to that, which threw the dominion of the German steel industry into the hands of a relatively small group of giant capitalists; since none others could reach out to such expansion: so that cartel policy inevitably strengthened the strong relatively to the weak. But, human nature being what it is, association which is knitted tightly together in constructive work, often develops common militant action; and in this case it is liable to be turned towards restrictive combination of the harsh German type.

Britain's control of the tin-plate industry is no doubt the result of several causes: but the chief of these has been that those engaged in it could make sure of obtaining the steel bars needed by them at reasonable prices. Associations to regulate these

III, xiii, 1. prices were not indeed absent: but they were not tyrannical; and indeed they could not raise prices much above those in the world market, as importation was free. So the German tin-plate industry which probably might have kept on at about even pace with the British, if the price of steel bars had not been raised against it by a cartel, was left far behind¹.

Larger questions are opened up when we come to the relations between the steel industries and the shipbuilding industries. The steel industries are reasonably jealous of any appearance of monopolistic discrimination in the freight charges by railways or shipping companies, which seem to favour foreign customers; who might divert traffic from them; they complain sorely when rather higher charges are maintained for home producers, who have no alternative course by which to escape². Reciprocally, shipbuilders complain that "the Steel market is largely controlled by the Steelmakers' Associations, which regulate both prices and area of supply": they say that though "the Combines have not hitherto been able to exercise any very great influence in raising prices, owing to the existence or imminence of foreign competition," yet "in certain specific cases combines have taken full advantage of their position, when foreign competition was excluded": the last five words are noteworthy³.

In fact though numerous verdicts in favour of facilities for regulating prices by combination can be obtained from particular industries, so long as each is thinking chiefly of the prices which it receives; such verdicts cover only a part of the ground. What one branch of industry gains by such regulation is apt to be more than lost by another branch which buys from it, except in so far as the loss can be shifted on ultimate consumers: and they are indeed often the main losers.

¹ See Jones, *The tinplate industry*, chs. vii and ix; also Levy, *Monopoly and Competition*, p. 205. Experiments in the vertical fusion of steel-bar and tin-plate making have not prospered; partly perhaps because German steel-bar makers were selling cheaply abroad bars for which German tin-plate makers had to pay high prices.

² See *Report on iron and steel trades*, pp. 34—6; and *Report on engineering trades*, p. 31.

³ *Report on shipping and shipbuilding industries*, p. 26; and *Report on engineering trades*, p. 31.

2. *When markets are perfectly open, the interests of the general public are defended in great measure by the alert watching of producers in each stage of industry against undue raising of the prices of their plant or material: but this defence is impaired when the price in each stage is arranged by a combination of producers in it.* III, XIII, 2.

Associations of producers are liable to develop price policies, of which the chief purpose is to stave off dissensions in the group affected, and to introduce harmony and good-will where sharp competition formerly prevailed. Concord is indeed obtained within a section of the nation: but generally at the expense of injuries to the nation at large, and particularly to other sections of it, which far outweigh the good achieved by concord within that section. But these evil results are less conspicuous, and much less prominently advertised than are its immediate benefits: and so the public is apt to be misled. It may be admitted that, if the businesses, according to whose needs the prices are set, are alert and equipped with the best plant, skill, and organization, the public interests are not likely to be much hurt; and they may even be advanced. But it often happens that the costs of production, including normal profits, which are to be covered are those of businesses which lag somewhat behind: and, here Britain appears at a disadvantage relatively to some other countries. For the great age of her industries puts difficulties in the way of their rapid reorganization.

In America and Germany many industries are controlled by relatively small numbers of powerful capitalists; most of whom are intent on large ambitions, and have little interest in inherited plant or traditions. They desire to make great gains by great transactions; and the cost of production, which they have in mind, is nearly always that of an alert business, equipped with modern appliances, and making for great aggregate gains by large output at rather low costs per unit: thus a complaint by a quiescent business that it cannot work at such costs may receive but scant attention. Those who are weak, through fault or misfortune, are left to go to the wall; or they are bought out, and their works are recast, or abandoned. In Germany the alert and all-pervading influences of the great banks make for good in these directions,

III, xiii, 2. But in Britain an association of producers often depends in great measure on the adherence of worthy firms, that reckon costs of production on the basis of good solid work or well-tried methods and with well-tried plant. They are content to sell generally at, or near, old high prices to those with whom they have an established connection; and in case of pressure they sell at forced prices, subject to no rule: but their support is desired by a projected association: partly because they may be a source of trouble if left outside. The path of least resistance is to take their costs as normal costs: with the result that alert members of the association claim credit for not pushing prices above normal costs, while inly rejoicing at the great excess of those prices over their own costs. No doubt an association, working on these lines, has little defence against strong attack: but it is likely to be vocal, and to shew some ingenuity in proving that it is threatened by unfair competition, especially if that comes from overseas; and can be convicted of selling occasionally at very low prices¹.

The manufacturer or trader is indeed strongly interested in obtaining materials, plant or product on terms, at least as low as those paid by competitors who sell in the same market: for, as a general rule, he loses the whole of any extra prices which he pays above those paid by most of his competitors; and he gains the whole of any lowering of prices which accrues to him alone. Hence it may be inferred that, so long as enterprise is entirely unshackled, the nation need not actively exert itself in regard to the prices of such materials and plant; since those, who have the most knowledge of such matters, are also those most deeply interested in obtaining

¹ The fact that provision must be made for the needs of businesses whose plant and energy are not of the best is well known, and it seems never to be denied; though frank, open statements on the subject are rare.

The National Association of British and Irish Millers was however told publicly in 1901 that "in arranging for fixed prices, it will be seen that the worst equipped and most unfavourably situated mills must be considered, and must of course make a profit: therefore the larger mills must of course work at such a margin of profit as shall, and indeed does, invite outside competition." To meet this some millers have "invoiced and charged flour at the price of the grade below" that to which it really belonged. (Quoted by Macrosty, *l.c.* p. 220.) If it had been possible to absorb the new competition, this clear avowal might not have been made: and the Association would have been able still to plunder the public.

them on favourable terms; and most alert to oppose any unfavourable change. III, XIII, 2.

But this inference is not valid when the price of the material or plant in question is controlled by a cartel, that covers the market in which any set of producers are interested. Of course an artificial rise in that price might go so far, that the consequent rise in the cost of finished products of the industry would materially curtail their sale; and, in such a case, nearly all those in the industry would be alert to oppose the rise. But the increase by, say, a tenth in the cost of a particular material or implement needed by the industry will often cause only a very minute increase in the total costs of its output, and therefore will not greatly affect the volume of its sales: and, in that case, the public may derive scarcely any defence from the opposition of producers in a late stage of the industry to an artificial rise of price in an earlier stage. In fact such producers have often argued publicly in this manner: "What each of us wants, is to know that his competitors will not get anything needed for their work at a lower price than he does: for, in that case, we can all safely pass on any moderate increase in costs, with profits, to the consumer: let us then make no trouble about a moderate uniform increase of price in regard to this or that secondary plant or material that we need." For instance, makers of galvanized sheets for roofing, care very little what price they pay for their steel, so long as they know that all other makers pay the same; and that they have nothing much to fear from the competition of slates, tiles, felt or other roofing materials. In fact they watch changes in the prices of such materials with more attention than they do the price of steel, when that is fixed by general agreement: that is to say, their own interests do not lead them to be active in protecting the ultimate purchasers of finished steel products against an artificial increase in the price charged by a cartel of heavy steel producers. Thus one small cause of increase in the cost of the finished product passes without resistance; and, if it stood by itself, it might do but little harm. But similar causes bring about other small increases in the cost of the finished product: and ultimately the public is liable to suffer much from an accumulation of

III, XIII, 3. small burdens, no one of which by itself would be a matter of serious concern to it¹.

3. *Cartel policies of exclusive dealing are often fortified by deferred rebates.*

Attention has already been called to the severity of the device for developing the monopolistic power of Coats' business, which consisted in refusing to sell to any trader, who handled similar goods at prices somewhat less in excess of costs of production than those fixed by Coats: in effect that apparently mild rule closed the entrance of the highway of business to any firm, which desired to establish a connection in the trade. Several British cartels have adopted the same device, with considerable success. But others have had recourse to that uncompromising policy of exclusive dealing, fortified by deferred rebates, which we have seen evoking drastic repression in America. It no doubt closely resembles in form the scheme by which the South African and other shipping trades have been partially monopolized: but, when applied to manufactures, it lacks generally the extenuating circumstances, which are found in fast-liner traffic. It aims of course at securing the control of a trader's custom by allowing a high Rebate or discount on the normal high charges of an association: and by deferring payment for some years; with the intimation that it will be forfeited, if the recipient meanwhile buys from anyone who is not a member of the association².

¹ In the export trade, where British producers compete chiefly with those of other industrial countries, an artificial rise in freights for exportation is of relatively small concern to the merchants, who pay it in the first instance. The producers and consumers are more nearly concerned: but they are seldom in a position to take action in the matter. Some similar maladjustments have been noted, above, pp. 443, 444.

² This practice has been adopted by several associations, whose products are needed for building houses and cottages, including several sorts of steel products. Its fiercest application in Britain has been made by an offshoot of the notorious American Shoe Machinery Company (see above, pp. 233—4; and 536—7): and the British Court of Chancery decided in 1907 that the leaser of machinery under this clause, binding him to use it to its "full capacity," may not cease to use it, when it ceases to be efficient for his purpose: he must go on working

An alert, well equipped producer may be able to earn good profits by sales at prices lower than those, which the association is thus induced to fix; and traders, if free, would welcome his supply. But they are not free; save in the very rare case in which this producer is able to supply all their wants: for, if they buy one class of thing from him, they lose their rebates on all their purchases. Therefore such producers cannot sell unless they submit to the edict of an association: and that is liable to be managed partly in the interests of its less energetic members, and to allot to others quotas of production too small to keep their advanced plant in full work. Thus, the public pay more than is necessary for their goods; though independent energy and enterprise meet but a scanty reward. A sectional association may gain by such means: but there is a net loss: and if every section adopted them, every section would be poorer. That is to say such policy is antisocial¹.

4. A combination in a British manufacturing industry, even when not protected by a tariff, may yet be able to raise prices artificially by the equivalent of double costs of transport between Britain and other countries.

We have now to consider the extent of the defence, which the British people derive from the free importation of manufactures, against the raising of prices unduly by associations at home. Of course, freedom of entry into Britain does not imply free carriage for the goods that come to her: nor free carriage for the goods, by which she effects payments for such parts of them as are not covered by obligations of other countries to her. In this matter large allowances must be made for the services of her shipping industry; for interest on her exported capital;

it even though it has been superseded by better machinery and has become incapable of being worked at a profit. This may be good law; but, if so, law provides inadequate protection to public interests.

¹ Cases are known in which an association makes itself responsible for paying profits on twice the plant, which would suffice to produce all the goods that it can market at the artificially high prices, which are required to enable its less alert members to work at a profit. This evil is often a little reduced in fact, though it is made more obvious, when badly equipped firms are allowed to lie idle; and yet receive, at the expense of the public, profits on the full quota which have been assigned to them.

III, xiii, 5. and for some other matters that are independent of the particular imports concerned: but, that being done, any increase in her imports must be covered by a corresponding increase of her exports in order to pay for them. All her exports of any importance, except coal, are manufactures in the production of which she has no advantage, other than the abundance of her capital and the energies of her people: and, for various reasons, she does not pay, and she ought not to pay, for a great part of her imports by the exportation of coal¹.

Therefore almost every increase in Britain's importation of manufactures has to be covered by an increase in her exportation of other manufactures; and every such change involves double costs of transport; those of her own increased exports, and those of the imports which come in return for them. Thus there is a *prima facie* case for thinking that British manufacture A, which fears the importation of rival products, paid for (together with double costs of transport) by the exports of another manufacture B, is somewhat lacking in alertness and energy.

This *prima facie* case is indeed subject to various exceptions, arising out of particular conditions of industry, and with one that is common to most branches of industry. We need concern ourselves here with this alone. It arises from the facts that B products may probably be offered for sale abroad at lower net prices (after allowing, that is, for cost of carriage) than are exacted at home: and that A products may similarly be offered in Britain at lower net prices than are charged for them in the country of their origin: we pass to consider this point.

5. *The policy of dumping. The claim of combinations to stabilize home industry.*

It is customary to sell abroad at lower *net* prices (that is, at lower prices after deducting all costs) than at home: and it

¹ Coal is not "produced" by man: he merely takes it out of nature's limited store houses. The position which Britain will hold in the world some centuries hence will depend largely on the care with which she has husbanded her stores of it: any generation which exports it, in order to pay for those manufactures, in the production of which Britain should hold her own, will inflict an injury on coming generations.

is suggested that this tendency implies attitudes of producers III, xiii, 5. and traders towards foreign competitors, somewhat different from their attitudes towards their own countrymen. There is no doubt a good deal of truth in this suggestion. But indeed the tendency has broad roots in the fact that almost every one is inclined to allay conflict in a market, which he regards as belonging to him in "particular"; while he is often inclined, and sometimes compelled to adopt a different policy, when pushing his way into a market on which he has no special hold¹.

In a sense the home market of any national industry is its "particular": and an association of businesses in it is likely to arrange prices in it somewhat on the plan of a cartel, even though it has no very firm cohesion. Its members are likely to agree not to press sales in the home market; when it is so unresponsive that it will not take more of their produce at prices, that cover or nearly cover full costs of production: with the understanding that those producers, who cannot conveniently hold their hands for a while, shall sell abroad at whatever prices they can get. From these small beginnings there are sometimes developed large policies of systematic "dumping" of a considerable part of the output of an industry in foreign markets, and especially in any that are regarded with jealousy. Early in last century, as has already been noted², Britain was the chief offender in this direction: and the lapse of several generations was needed to undo the hurt, which she thereby caused to her own reputation. In recent times Germany has been the chief offender; and the present inquiry may be continued with reference to her policy in this matter. We need not concern ourselves with the suggestions, that the exceptional energy, with which she has developed this commercial policy, is a necessary part of her

¹ See above, pp. 182; and 400—402. The case was put by a witness before the Industrial Commission (*Report* XIII, p. 493) thus:—"Business that is at my door I think belongs to me, but I am willing to make a sacrifice to get a foreign market, because by that very process I reduce my cost at home. By a foreign market I mean a market outside of my natural territory. I would say the Chicago merchants sold for less money in Omaha than they did in Peoria, because they are either competing with St Paul on one side or St Louis on the other, and I would say that they sold for less money in Denver than in Omaha, and for even less in San Francisco than in Denver."

² Above, p. 167; and below, pp. 781—2

III, ~~xv~~, 5. militant policy: and that she "dumps" in order to prevent the rise of rival industries in other countries. For in fact very little of the cheap selling abroad by cartels in the steel industry, and others of which Germany has no monopoly, has this excuse—whatever it may be worth.

Of course a policy of dumping can always be stopped by special import duties on dumped wares, if it is worth while: and there seem to be a few cases in which it may be worth while. But some caution is needed in this matter: for that remedy is likely to be advocated with energy, and with the advantages derived from intimate knowledge of details, by individuals, and by associations, who desire to keep prices in the home market high enough to yield profits to businesses that are not very alert, and still use plant that is not up to date. Moreover it appears that some of those, who are prominent in emphasizing the case against artificially cheapened imports into Britain, are themselves inclined to sell abroad at very low prices, in order to maintain very high prices at home. There is indeed something to be said for declining to protect a British industry even against artificially cheap imports, if it carries far the practice of lowering its own export prices relatively to its home prices: and in any case care must be taken lest provisions made for the purpose of repressing malignant forms of underselling be so worded, as to condemn methods of trading which are practised on occasion by honourable British firms. This danger is likely, if ignored, to lower the reputation of the country for fair dealing.

The Report of the Engineering Committee already quoted has that danger clearly in view: and recommends the adoption of legislation similar to that of America, which orders that selling at low prices—that is, at prices less than those prevailing elsewhere—be prohibited, not absolutely, but only "Provided that such act or acts be done with the intent of destroying or injuring an industry in the United States, or of preventing the establishment of an industry in the United States, or of restraining or monopolizing any part of trade or commerce in the United States¹."

¹ [Cd. 9073], pp. 27, 28. Some claims for Protection against the dumping of foreign goods in Britain imply a moral indignation against the practice. It is,

We may now pass to consider the claim that the effect of cartel policy in general, and especially the policy of selling at very low prices abroad, tends to stabilize industry. It may be admitted to have some force in regard to any depressions of credit, industry and trade that happen to be localized in a particular country. For then sales at home may be almost impossible save at extremely low prices; and an extension of sales abroad will tend to turn the Foreign Exchanges in the favour of the distressed country; at the same time that they facilitate the maintenance of some moderate degree of employment at home. On such an occasion, however, every one has always been eager to sell abroad cheaply; and there has been little need for organized action in the matter. III, xiii, 5.

But in the last few generations there have been very few cases, and none of very serious importance, in which a single country has been struck by a severe dislocation of credit, industry and trade; while the rest of the western world remained almost undisturbed. Almost every recent wave of high or low commercial activity has spread, not very unevenly, over all countries in which large scale capitalistic production has prevailed. When the Steelworks Union for instance has the greatest need for disposing of surplus steel, the British market is not likely to absorb much except at very low prices.

Also the policy of maintaining rather high home prices for steel products when general credit is bad, obstructs the recovery of credit. For when the deepest depression has passed, businesses of all kinds begin to consider repairs and extensions of plant, for which opportunity was lacking in the preceding period of expanding credit and of work at high pressure; and there is, in consequence, a new demand for steel products: this in its turn sets retail and other businesses on increased work. The policy of the Steel Union tends to delay this revival: and thereby it has probably done more to increase the evils of industrial fluctuations than all its other efforts have done to diminish them. Its constructive efforts have been excellently seconded by the

therefore, of interest to note that "The Chairman of an important Metal Association stated" to the Commission on Trusts (see its Report, § 8) "that he would not agree that British firms dumped in the aggregate much more than foreign firms."

II, xiii, 5. close association of Germany's great banks with industry: and, if the policy of selling abroad at much lower prices than at home worked effectively for the stabilization of industry and trade, she would have suffered less from commercial depressions, when under the influence of her cartel policy than Britain has done during the same time. But in fact the opposite seems to have been the case.

The matter has not been fully examined. But we know that Germany has been struck by every recent storm of bad credit that has struck other countries; and that in 1901 she suffered very much more than others did. Also we know that industries, which are under the control of an ambitious cartel, are frequently disturbed, even while the sky generally is clear, by rumours that some of its leading members are threatening to desert it. The firmly-based coal cartel has itself been shaken by such rumours: the Steel Union has seldom been free from them; and an investigation of the prices of heavy steel products by Dr Vogelstein for the nine years ending in 1903, showed that every one of them had fluctuated in Germany as much as, or more than, in England¹.

Thus, while large acknowledgment is due to the ability, with which the Steel Union strives to distribute the benefit of Protective duties among the various sections of the Steel industry; all that can with certainty be said in its favour is that its breadth of view has lessened the evils, which would otherwise have been caused by the tendency of cartels to press the interests of particular sections of the nation against those of the nation as a whole. In that respect British associations have something to learn from it².

¹ *Schriften des Social-Vereins*, No. 106, p. 128. This statement seems to be supported by a comparison of Sauerbeck's records of price movements in Britain, with those shown in *Die Bewegung der Waarenpreise in Deutschland von 1815 bis 1902*. See also above, p. 572 fn. It has already been noted (p. 572 fn.) that the rumours of a coming syndicate set up violent expansions of plant in order to justify high figures of participation. Some observations on the influences exerted by German and British policies in regard to steel on the well-being of the operatives concerned will be found in Appendix O.

² Thus *The Report of the Engineering Trades*, already quoted, says (pp. 9, 10) "Whereas the manufacturers are in the habit of quoting a reduced price for steel for direct export (the margin has been as much as 20s. per ton), such steel manufacturers refuse to make any rebate to English engineering manufacturers, even when it is proved to their satisfaction that the goods to be manufactured from that steel were, in fact, for export purposes."

On the whole it may be concluded that the restrictive methods of German cartels have no claim for imitation on the ground that they make for the stability of industry. But this does not imply that it is beyond the power of associated action to work in that direction. For instance, many a ship has earned *net* more than its full cost in a single year; while in some other years its earnings have not covered its expenses: and the consequent violent variation in the values of ships and in the demand for new ships is a chief cause of instability in the steel industry. Consequently a suggestion has been made that ship-owners, shipbuilders, marine engineers, and all combined should endeavour to promote shipbuilding *on falling markets*. Such action by an association would be in a high degree constructive¹. III, XIII, 5.

Policies which are appropriate to a military and partially autocratic Government, such as was that of Germany before the war, are likely to be unsuitable for a democratic Anglo-Saxon country. A strong democracy has a great respect for law: and therefore, although its Government is often somewhat inefficient in business administration, it can rely on full justice being done by Courts of Law in a suit, in which the interests of both parties to a contest are set out clearly by able and well-instructed advocates. That is likely to be the case when the issue is between the claims of two powerful private interests. But when a large public interest is at variance with the interest of the nation as a whole, Counsel for the nation find generally that their clients are not able to supply them with information as full, as penetrating, and as technically thorough, as that which comes easily to the hand of a private interest whose concerns are in question. In fact a democratic Government is at a distinct disadvantage in this and

¹ See *Report on the shipping and shipbuilding industries* [Cd. 9902], p. 30. Mr E. J. Benn, *Trade as a Science*, ch. IX., suggests a good model constitution of a Trade Association, and its District Committees with special reference to the export trade, to scientific research, to educating labour in the objects of its industry, and to educating employers to a proper understanding of the labour point of view. It should receive recognition, and perhaps financial aid from Government, subject to certain conditions; one of which is that it does not attempt to regulate prices within the home market. This scheme is developed in his *The trade of tomorrow*.

III, xiv, 5. other respects relatively to a capable autocratic Government, well served by a congenial bureaucracy. (See below, pp. 850—1.)

Bureaucratic methods are alien from the genius of democracy: and, though the British Government has been compelled by the emergency of war to make large uses of them, it is to be hoped that it will return to the wholesome method of taking the nation into its counsels by full publicity as soon as possible. It can turn the balance in its favour by organizing the knowledge, that is necessary to enable it to present the case of the nation on fairly even terms with the case of a private interest: and, by making public the knowledge it thus acquires, it can bring public opinion along with it. By Commissions of inquiry, sitting with open doors, and similar means, it can enable the people to appreciate its actions and its motives: it can thus gain more strength for itself and for the nation than is possible by intervening in industrial procedure in any other way¹.

The *Report of the Committee on Trusts* recommends that means be provided for the investigation of businesses or combinations of businesses, "which have for their purpose or effect the regulation of the prices or output of commodities or services, produced or rendered in the United Kingdom, or imported into the United Kingdom, or the delimitation of markets in respect thereof, or the regulation of transport rates and services, in so far as they tend to the creation of monopolies or to the restraint of trade." Annual reports by the Board of Trade, which is to have direction of the matter, are to be provided "whereby the fullest information as to the activities of Trade Associations may be made available to the public, and complaints may be promptly and thoroughly investigated, so that doubts and suspicions may be dispelled, or, on the other hand, the true facts ascertained as to evils for which a remedy is required." The Committee express the opinion "that it will

¹ Some peril seems to be threatened by suggestions such as the following, made in the generally excellent *Report on the Engineering trades* (p. 28) in regard to trade combinations:—"No secrecy should be allowed. All trade combinations should register their terms at some Government Department such as the Board of Trade....The terms should not become public property: but their registration would...enable the Board of Trade to take any steps that might be necessary in the event of such combinations being harmful to trade or prejudicial to the consumer."

be found necessary ultimately to establish further machinery III, xiii, 5. for promptly and effectively dealing with such abuses as the Tribunal of Investigation may discover¹."

¹ Such a Tribunal is to be set up in cases in which a preliminary inquiry made by the Board of Trade gives inadequate results. It is to have "a person of legal qualifications as permanent chairman, and from two to seven other members selected by him from time to time from a panel appointed for the purpose by the President of the Board of Trade after considering nominations made by representative trade organizations, including the Cooperative Movement and Trade Unions, which Tribunal shall have power, on the application of the Board of Trade, to make orders for further information on the matters in hand."

This plan seems excellent in many respects, provided the branch of the Board of Trade which is responsible for the work is as strong a body as the Federal Commission. If so, the able men, who give their whole lives to the task will be in a good position for ascertaining what information should be required: and then it would be sufficient perhaps to provide for an appeal to an ordinary Court of Law. For when the case of the nation is presented to such a Court, by counsel instructed by such a body as the Federal Commission, there seems to be a gain on the balance in obtaining a judgment on the purely legal aspects of any matter of contention, from a Court, which approaches the matter with an open mind. In so far as the problem is one of business rather than law, a lawyer, as such, has no special authority.

The Report is brief: but much information is added in important papers by Mr Percy Ashley; and by the Secretary, Mr Hilton. Sir John Macdonell adds an authoritative and much needed statement as to the law relating to combinations.

CHAPTER XIV

THE DECLINE OF EXCLUSIVE CLASS ADVANTAGES IN INDUSTRY

- III, XIV, 1. 1. *The spread of education, and technical changes which lessen the strain of physical work, are mitigating many of the disadvantages under which the manual labour classes lie.*

The industrial sectionalism, with which we have so far been concerned, is based on varieties of occupation: and so rapidly do capital and labour—whether mental or mainly manual—migrate from one occupation to another, that time itself brings some remedy and some retribution for any harsh or unwise action on the part of those engaged in a particular occupation. But the case is different with the semi-monopolistic advantages which the upper strata of industry have always possessed over the lower. These advantages have indeed changed their form considerably: for at one time they were in great measure incidental to the superior political position of freemen over serfs and others of lower degree; while now, in Britain at all events, there are scarcely any exclusive political privileges. But meanwhile the scopes of industrial technique and business relations widened so much, that the superior education and larger outlook of the well-to-do classes became of increasing importance in all but the simplest forms of business; and on the whole the division between the “upper” and “lower” classes in industries seemed to grow broader during the second and third quarters of last century.

More recently however an opposite tendency has set in. The movement towards the better education of the people at large, which had been gradually growing, received a great impetus from the Education Act of 1870; and it has proceeded so fast and steadily that the more alert of the working classes

now stand on nearly as high an intellectual level as do the III, XIV, 1. great majority of the middle classes.

Meanwhile the hours of manual labour have been shortened, and excessive strain on muscles has been lessened by the increased use of steam power, and its distribution by electricity. Perhaps the percentage of artisans who are so tired at the end of the day's work as to be disinclined to use their minds actively, is not a tenth as great as it was a century ago; and meanwhile the abundance and cheapness of periodical and other literature, adapted to their requirements, and even specially devoted to their interests, have increased very fast. In the result some leaders of the working classes are able to hold their own in discussions of grave problems of politics, as well as of industry, with the foremost men of the time¹.

The influences of school education may be developed or impaired by those of the home; and the full effects of improved schools cannot show themselves till they have been at work for at least two generations. Partly for this reason, occupational status still goes much by inheritance. A large majority of the sons of unskilled labourers, of artisans, of men in the upper grades of office work, of employers, and of professional men are in occupations which have about the same social prestige, and yield similar incomes to those of which they heard most in their childhood².

This result may be partly due to the fact, that even now an average middle class family with an income of two or three

¹ Working class leaders have an advantage in this matter over many men of at least equal capacity in other ranks of life, in the fact that they have attained leadership mainly by their power of expressing clearly and forcibly their views on matters of large general interest. Moreover they are the selected representatives of classes much larger numerically than are those of the well-to-do: and are therefore likely to have at least as large an average of high natural ability. It appears that they put the cases of their clients before Commissions of Inquiry at least as effectively as do the representatives of employers (I feel justified in saying that this was the general impression of the members of the Royal Commission on Labour, 1891—4, who had exceptional opportunities of forming a judgment).

² No doubt a lad who has true business genius has at least as good opportunities for developing it in the actual work of production or trade as elsewhere; but such a lad rises quickly to wealth: and he is apt to be regarded ultimately as evidence of social inequalities, whereas in fact his history points the other way (see above, pp 358—361).

III, xiv, 1. hundred pounds is likely¹ to spend more of it on the dignities and amenities of life, and less on food and drink and other direct sources of enjoyment, than does an average working class family whose aggregate incomes reach to about the same amount. The minor amenities and conveniences, thus acquired, serve as a passport to the consideration of an employer who is filling a position in his clerical staff, from which a rise to important duties may come rapidly to anyone who proves himself capable. Meanwhile the universality of education has deprived the lower order of office work of a claim to be held superior to that of the skilled artisan; and yet tradition has caused the word of command in the counting house to be expressed in gentler form than in the works themselves. Though a very small thing in itself, the irritation, which has been expressed increasingly during recent years by manual operatives against this distinction is a striking sign of the times¹.

The preferential advantages, possessed by those born of well-to-do parents in regard to the higher posts of industry, have in effect something of the nature of monopoly: but they are not based on any exclusive compact. They are thus in contrast with such trade-union regulations as restrict particular classes of work to those, who have acquired their skill in it under the auspices of the appropriate craft. Some of these exclusive regulations appear to be justified by special conditions: but speaking generally, they are not on the same footing, as is often alleged, with those which prohibit anyone to give medical advice in return for payment, unless he is duly authorized to do so. For the patient cannot, as a rule, form a good opinion as to the quality of the advice given him; while the employer, or manager of a

¹ Of course the serfdom of Mediaeval England was a survival of times when the ruling classes were in effect officers of a nation in arms: and the terse military words of command extended into domestic life. So long as "manufacturer" was really a man who "works-with-his-own-hands," there was no broad line of division between him and those who worked alongside him; though on occasion they might be subject to furious physical violence. But machinery made the ordinary manufacturing unit so large, that the employer did best for his output, by working at it only with his mind: and the separation which thus arose between him and his "hands" was imperceptibly increased by the noise of machinery. The noise of battle demands short sharp words of command: and noise has been a contributory cause to similar methods in the factory itself: while the quiet of the counting house is conducive to quiet and easy speech.

cooperative business, can form a good opinion as to the quality of the work done for him by an artisan. Therefore the cases for partial monopolies by trade unions and by the medical profession are not on like footing; though it is true that trade-union discipline works for good in some respects, and that the discipline of the medical profession might be pushed to antisocial extremes.

2. Real and apparent divergencies of interest among the manual labour classes; for some of which a remedy is sought in collective bargaining for particular tasks.

Trade unions have in some cases systematized a practice which has prevailed in many workshops, without any formal organization: it is to censure, and in some cases penalize, anyone who appears to them to injure the collective interests of the workers by doing more than his share of the work: the work in sight is regarded as a "work-fund" to be distributed as equally as may be. The practice is of older date than the introduction of mechanical processes: but it has been inevitably fostered by them.

When hand work was dominant, an artisan could gain distinction and reward by work that approached in character to that of an artist. For that reason he seldom worked fast: and his comrades could not complain that he absorbed more than his share of the work that was to be had.

But in the modern machine work, and especially in repetition work, output is apt to be judged by quantity; subject to the condition that its accuracy and finish be sufficient for the purpose in view: and the capable mechanic earns distinction and money by giving his machine every opportunity to do its utmost. He is alert to tend its wants, to keep everything in the right place; and thus to secure that it is seldom idle, and never makes bad work. He makes the machine diligent: and the reward of its diligence goes partly to the operative, and partly to the employer who has secured his services. But his comrades look askance. Excellence of handicraft does not reduce the stock of work to be done: but large quantity of output may be obnoxious, because it invites a reduction of piece-work price; and because it uses up more than they regard as one man's share of the work on hand.

No doubt there are exceptional conditions under which slackness of employment in a narrow range of work may be percept-

III, xiv, 3. ibly increased by exceptional activity on the part of particular workers. But the notion that the condition of the working classes generally can be improved, if each group of them refrains as much as it can from using up the "work-fund" at its disposal, is the chief cause of the most bitterly antisocial policies into which the working classes have ever strayed. No doubt the chief immediate sufferers are as a rule particular employers or groups of employers: but, such stinting of production is most common in industries that make goods for general consumption, or else machinery (including ships and locomotives) to be used in increasing the supply of such goods: and therefore in the long run the working classes, as a body, are themselves the chief sufferers from it. Any section of industry that adopts the practice is likely to lower considerably the purchasing power of the wages of other workers¹.

The exceptional degree in which British artisans lent themselves during the later part of the century to antisocial practices in regard to stinting of work generally, and refusing to manage more than one semi-automatic machine at a time, stands out in strange contrast to the general nobility and generosity of their character: for that appears not to be surpassed, even if it is equalled, among the corresponding classes of any other

¹ Misconceptions on this subject are still prevalent. But Mill well observed: "What constitutes the means of payment for commodities is simply commodities. Each person's means of paying for the productions of other people consist of those which he himself possesses. All sellers are inevitably, and by the meaning of the word, buyers. Could we suddenly double the productive powers of the country, we should double the supply of commodities in every market; but we should, by the same stroke, double the purchasing power. Everybody would bring a double demand as well as supply; everybody would be able to buy twice as much, because everyone would have twice as much to offer in exchange." This matter is considered in my *Principles of Economics*, VI, xiii.

It would be wrong to suggest that so astute a writer as Mr G. H. D. Cole supposes that there is any sort of work-fund: or that so public-spirited an enthusiast, as he has shown himself, would purposely mislead his less skilled followers. But it is to be feared that some of them may be encouraged in defence of anti-social practices by his observation that "a big hourly or daily output (in a general shop) does produce unemployment, because it prevents 'the nursing of work.'...The adoption of 'scientific' systems of payment, which give the worker an inducement to 'go all out' irrespective of the volume of work available, undoubtedly tends to increase the amount of temporary unemployment, and this is one of the most serious criticisms that can be levelled against it." (*The payment of wages*, pp. 75—8)

country. The explanation of the paradox seems to be that this evil side of trade-union policy was developed at a time when Britain's machine industries were so far ahead of those of any other country that they had little to fear from external competition; while in other countries the necessity of making the most of the relatively imperfect appliances, in order to make way against British competition, was so urgent and so prominent that vested interests in the sectional control of machinery had little chance of being developed. But the fathers have eaten sour grapes and the children's teeth are set on edge; there is now scarcely any industrial plant in Britain, which has not its equal in America or some other country; and such remnants, as still exist, of un- reasonable refusals on the part of her artisans to get the most that is possible out of her plant, tend to make her position as a leader of industry lower than it otherwise would be: and, since Britain's working classes are the chief consumers of the products of her machine industries, each group of her artisans is likely to lose by antisocial practices on the part of other groups more than it can gain by its own¹.

The latent good in many men was brought out by the nation's great emergency in the recent war: what success Government munition and other works had, seems to have been in large

¹ Reference to this matter has already been made; above, pp. 103, 136—7. The extremist case of this sectional selfishness which has come under my notice is that of a glass worker in the Midlands, who boasted that his local union had mastered the wage problem. No member might apprentice more than one son to the industry: no one else might enter at all. Consequently the supply of labour decreased absolutely, and not merely in reference to the population; and wages had been forced up to £1 a day—a rate much more exceptional then than now. It was objected that the industry must necessarily migrate: he answered;—“Scarcely in my time; the fixed plant cannot be lightly abandoned. If it migrates, I will follow it: two or three weeks' wages will cover the expenses of moving.” This “Achilles' heel” of Britain's industries attracts as much attention abroad as it does at home. For instance, an American writer, quoted in *The Economist* of April 26, 1919, remarks: “In England men are thoroughly wedded to the system of restricted output. In New York one man will run three gear-cutting machines, but an English working man will run only one.” During the war cases are recorded of boys, straight from a Board School, put on to a simple operation, who averaged £4. 15s. in a normal week, and without strain, earned at the same prices at which men had refused to earn more than £2. 10s.: and women earned £6—£10 where men had loitered down to £4—£5. Those instances are given in an instructive article by Sir Lynden Macassey in the *Edinburgh Review*, April, 1919, p. 333.

III, xiv, 2. measure due to its power of compelling antisocial practices to be set aside in work for it; and to the hearty willingness of the workers to make sacrifices less exacting than those of their comrades in the trenches. The Government's control of work, in regard to munitions and some other things, rode on the top of this wave of patriotic unselfishness, with results, which are notable; though inferences from them are not directly applicable to ordinary conditions¹.

Since the appeal to a strong worker not to work so hard as to cast reflections on others who are less able, or even less industrious, is a chief cause, so far as the employees are concerned, of the vastly inferior *per capita* output of British industries to those of America: welcome may be given to a movement in the direction of "collective" piece-work; under which a job is taken on contract by a group of workers, not necessarily of the same craft; and often including unskilled workers, and even boys. If it is done quickly, the payment for it will exceed the aggregate of the time-wages of all; and the surplus is then divided out, generally in proportion to the time-wages due to each: this causes each member of the group to benefit by the energy and ability of every other. The scope of the responsibilities of the manual workers is not materially increased so far: but a second step is under discussion, which may have that effect; and, if successful, will go a long way towards lowering the monopoly of high responsibility which still generally belongs to the employing class. It is suggested that, *in alliance with organized office workers*, a Shop Committee should arrange with the owners of the works that they should be free to take a contract from a customer. This suggestion, though without practical weight at present, is significant of a broad tendency which manual workers are showing to endeavour to bring over brain-workers to their side. Unfortunately the faculties needed for the higher work of business can be judged only by those who have those faculties. Under election from below several incompetent managers are likely to work havoc before one is found, who is capable of taking rightly those risks which are needed for progress.

¹ A little has been said on this matter above, pp. 224—5; 491—2.

3. *Some further observations on the movement, voiced by the Whitley Report, for enlarging the influence of employees over those affairs, connected with their employment, in which they are most nearly concerned.* III, xiv, 3

(We now return to changes in the conditions of employment. The world-war brought together men of all social ranks in the trenches, and thus helped them to know one another. It also enforced rapid changes in organization within industries and between industries: and it increased the need for explaining to all the urgency of new developments, and for enlisting their co-operation in overcoming the difficulties in the way.) Thus all were inclined to consider suggestions, such as were made in the Whitley Report, for setting up Joint Works Committees, leading up to Joint Industrial Councils for each district, and then to Joint Industrial Councils for the nation¹.

One of the main purposes of the Whitley Report is indeed to raise the status and develop the self-respect of the workman, by enabling him to form and express well considered judgments on all those aspects of the business in which he is employed, which specially affect him; and in a less degree on the general policy of the business, in so far as there is no need for keeping them private. In all these matters "frank talk heals"; and, as the workman's knowledge and faculty expand, growing self-respect will give firmness and moderation to his policy.

¹ See above, pp. 393—4. The urgency of this movement was increased by the hurried, and sometimes ill-considered action of Government, which was overstrained by the immense burden of the task imposed on it: for though the ablest men in the country put their services at its command, often to their own great inconvenience and pecuniary loss, many important secondary tasks had to be entrusted to people who lacked experience, perseverance, sound judgment, and knowledge of their own limitations. "Industrial Unrest" was the subject of a series of Commissions of Inquiry which reported shortly afterwards. All of them assigned chief places to nerve-strain caused by the events of the war; fatigue due to overlong hours of work; to frequent disturbances of arrangements through changes in Government orders, by which the serenity of employers and employed was disturbed: to the setting aside of trade union rules; and to the disproportionately high wages sometimes obtained by unskilled labour, and even by boys. For instance, in reference to the *West Midlands Area* [Cd. 8665], pp. 7, 8, it is reported that work was being done at piece rates "fixed in peace time when not only were conditions more leisurely, but orders were received in dozens and grosses, where now they are received in thousands and tens of thousands"; and

III, xiv, 3. The Report suggests that the Joint Industrial Councils and Workmen's Committees, already described, shall include in their aims the better utilization of the knowledge and experience of the workers: settlement of general principles for fixing, paying, and readjusting wages with a view of securing to the workers a share in the increased prosperity of the industry: arrangements for fixing wages, piece-work prices etc. both generally, and in regard to particular jobs: technical training and industrial research: the development of inventions made by the workers, with the cooperation of the employers; and legislation affecting the industry¹.

That is to say, it is proposed that everyone shall contribute, both as an individual and in association with his comrades, to the solution of such business problems as are of most direct interest to him and to them. This cooperation may be expected directly to promote correct understandings, by every individual and group, of the desires, grievances and capabilities of all: and indirectly to enable the more able and enterprising minds in each several rank to approach gradually towards a full comprehension of the supreme difficulties and strains involved in the piloting of a progressive business in a progressive branch of industry. The remainder of this chapter will be much occupied with the contrast between these two kinds of business work—one of which is more or less within the grasp of every thoughtful and responsible person: while the other requires somewhat rare faculties; and in many cases, a longer special training than is needed for navigating a ship on the ocean, if not for making a correct diagnosis of a subtle disease.

"in many cases the wage reaches six, eight, and ten pounds a week, or even more, by workers with no previous experience. At the same time the Tool-maker and the Gauge-maker, both skilled men whose skill is the basis on which the machine operates...are receiving considerably less than the piece worker....The injury to his self-respect is as great as that to his pocket....The Leaving Certificate System prevents him from taking up repetition work himself."

¹ It may probably promote, among other things: "Suggestions as to improved methods of manufacture, tools, jigs, gauges: new methods of production: class of labour to be used on new types or reconstructed machines: criticism and adjustment in existing piece-work prices...due regard being had to custom etc.: cooperation with the management in supervision: shop troubles and grievances: suspensions and dismissals consequent upon slackness in trade: shop rules—timekeeping, meal hours, cleaning-time etc.: changes...between payment by

4. *The control of a great part of business organization may be diffused: but decisions as to the taking of risks generally, and of new departures in particular, should remain, for the present at least, in the hands of those who will bear the burden of the risks.* III, XIV, 4.

Judicious, orderly and vigorous management of routine will often suffice to enable a business to prosper in an industry, the methods of which are for the time practically stereotyped. But such management, while useful in its generation, has contributed very little towards progress: and, if routine had been universal, a country of the size of Britain would have afforded support for only a few million people, barely supplied with the necessaries of life. Progress has been effected on the scientific side by students and by business men: on the practical side by those business men, who have been alert to invent or adopt new ideas; to put them into practice, bearing the risks of loss; to improve on them, and again to improve on them. At each step these men have weighed many complex considerations, one against another: and finally they have acted boldly and freely, because that which they risked was their own.

No doubt in many industries the capital, required for efficient work, has become so large as to exceed the resources which are commonly to be found in the hands of a single owner, or even of a private partnership. And it is true that the directors of a joint stock company must sometimes take decisions, which are in effect final, as to large risks to be borne by capital of which they themselves are relatively small holders: but those directors are nearly always men of wide business experience; who have been in effect selected and are still in

time and according to results: matters relating to welfare: demarcation between trades, with the free sanction of the Trade Unions concerned: advice on workshop conditions and other matters affecting labour." See a paper by an engineer in *Labour and Capital after the War*, edited by S. J. Chapman, C.B.E., pp. 151—2.

At the moment of writing there appears to be some differences of opinion as to the relations of the Whitley Councils to the great National Industrial Conference, which is to collect, digest, and disseminate information and suggestions that make for industrial progress; and probably to develop some other functions. It may perhaps be more directly representative of crafts, as distinguished from industries, than the Whitley Councils are.

III, XIV, 4. a measure supervised by strong stock-holders, who themselves have been trained in the fierce arena of great transactions¹.

Now, though the employees of a business may often contribute advice and aid in the general management of a business; they are seldom in a position to form good judgments as to new developments of the business, nor even as to the selection of the risks to be taken in its ordinary course. Were it otherwise, businesses owned by the workers themselves would certainly have had a great past: and the general spread of enlightenment would have insured for them an ever increasing rapidity of growth in the future. For so thorough is the organization of capital supply now, that the past successes of businesses owned by working-men would have enabled such of them as were in good repute to obtain from bankers and others large supplies of capital at low rates. It may therefore be inferred that the chief hindrance to the advance of working-men to the control of business lies in a lack, not of capital, but of the training and habits of mind needed for dealing with the larger problems of business policy; and especially deciding on doubtful ventures in regard to technique and plant, to marketing; and last, but not least, on the selection of the right men to fill the higher and more responsible posts. In these matters only those working-men who are of exceptional ability can form fairly good judgment: and, even if no jealousy intervenes, they are in great danger of being outvoted. These difficulties are greatest in those industries in which technique is changing most rapidly: that is, those on whose enterprise and resource the general progress of the world and the industrial leadership of a nation most closely depend². This observation is consistent with the fact that a great part of the supply of business genius of the highest order, especially in America, has come from the working classes: for such genius is in great measure innate; and an alert youth in a factory or counting house has great opportunities for sharpening his wits in relation to realities³.

¹ See above, pp. 316—328.

² The experiences of cooperation and copartnership are of interest in this connection: see below, Appendix P.

³ See above, p. 359. The supply has indeed not been in full proportion to the large numbers of the working classes: but this may be due partly to the

5. *Britain can obtain her necessary supplies of food and material only by continued leadership in those industries, which make large use of the most expensive mechanical appliances: that is in those industries which have the greatest need of the bold, judicious, unfettered undertaking of grave risks under difficult and ever-changing conditions.* III, XIV, 5.

No thoughtful person regards with satisfaction the extreme inequalities of fortune, which are conspicuous in the present age; and, in great measure, have taken the place of the inequalities in military and political power, which have prevailed in earlier ages. As the herdsman and the gardener are more careful to protect from hurtful disturbance such cattle and plants as are of exceptional value, so an enlightened communistic régime would take care that those, whose thought and work were of high value to the State, were able to give all their strength under favourable conditions to the discharge of their special functions. But that ideal Golden Age, which almost every people has thought to discern in the past, permitted no sumptuous expenditure save on public account—*Privatus illis census erat brevis; commune magnum.*

The imagination, which endowed the individual with heroic virtue, endowed the State with an equally heroic wisdom and activity in the service of all: and imagination, though vain, was logically consistent; for the State at any time and place is the chief emanation of the character of mankind then and there. Of course a despotic State may represent the aims of a military minority, but we are now concerned with a self-governing people. The State, which they evolve, will reflect whatever purity of aim and nobility of purpose are to be found in their lives, but no more: it is likely to be much less efficient for its purposes than they are for theirs, because its tasks are much heavier than theirs. Nevertheless the State is the most precious of human possessions; and no care can be too great to be spent on enabling it to do its special work in the best way: a chief condition to that end is that it should not be set

fact that natural faculty is in some degree inherited: and therefore a man who has the genius needed for brilliant business success is more likely to be the son of a parent who has made some considerable advance himself, than of one who has not.

III, xiv, 5. to work, for which it is not specially qualified, under the conditions of time and place.

In the early military ages, the despotic ruler—whether a monarch or a dominant section (such as the Roman *Populus*, which called itself the “Republic”)—could accumulate capital; by means of a large command of forced labour of slaves or serfs: such labour was capitalized in the great Roman Aqueducts. Modern appliances for manufacture, and for transport by land and sea of imported food, materials and other things, in exchange for manufactured and other products, have enabled nearly the whole population of every western country to enjoy a greater amount of comfort than was to be had by any but the very rich a few centuries ago. They have so diminished the strain on human muscles that education is now a real force; whereas without such aid the strain of severe manual labour would have left most operatives at the end of the day’s work, so tired that the brain would have been unable to make good use of any faculties that it had acquired. *But yet a modern Government seldom accumulates capital: it is a brave borrower.*

In some countries a good deal is accumulated in driblets by peasant proprietors and other “small-folk”: but in the progressive western world the task is for the greater part in the hands of the middle and upper classes: and they consequently receive nearly all the direct money income derived from it. But that direct net income is small in comparison with the indirect benefits derived from the increased efficiency that the aid of capital bestows on man’s productive work: these benefits belong to the whole nation; and much the larger part of them in the aggregate goes to the working classes. More machine power goes to the production, and more shipping goes to the carriage, of each pound’s worth of a labourer’s purchases than to each pound’s worth of an artisan’s purchases; and several times as much goes to each pound’s worth of his purchases as to each of those of the very rich man. And yet, it must be repeated that the artisan, even when earning as good an income as many of those who are regarded as middle-class brain-workers, seldom saves as much as they do¹.

¹ The chief causes of this difference are no doubt to be found in traditional custom and inherited qualities. But a minor cause may be found in the fact

It is to be remembered that the income derived from capital did not increase as fast as the savings from which it was derived, until the time came for the State to borrow a great part of it at a high rate for the purposes of the world-war: and that, if the private capital at the disposal of Britain and America had not been available, German troops would have treated Britain as they did treat Belgium. Moreover, it seems probable that, if the motives and opportunities for the accumulation of private capital in Britain were considerably reduced, while average human nature and conduct remained much as it is now, her total supply of the material appliances needed for high grade manufacture and trade would be so much reduced by wear and tear, obsolescence, and exportation, that ere long her people would become relatively poor. In fact it might soon become so small, that an even distribution of the whole income of the country among all her inhabitants would bring down the incomes of all below that of the artisans and other well-paid manual workers now. Even as things are, such a division would give more meagre results than is generally supposed¹.

that the widow of a working man and his daughter can earn their livings and accept aid in ways, for which derelict members of the middle classes have not been prepared by previous experience.

¹ Professor Bowley's *The division of the product of industry*, 1919, shows the total income of Britain, derived from home sources, to have been in 1913—14 £m 2,000 or £m.2,100: which "would not have yielded more than £230 per family of five; or £170 net after all rates and taxes were paid, and an adequate sum invested in home industries. The income brought home from abroad amounted to about £m 90, or £10 a family. The average family is not however five as is frequently assumed, but about 4½ persons....The average net income of a family ..would have been £153 from home-product, or £162 if income from abroad is included ...There are on an average nearly two earners to a family."

Suggestions in this direction had been occasioned by anxieties, less than those of the present troubled time. Thus in my *Principles of Economics* (first edition, 1890, pp. 47—8) it is observed that since the repeal of the Corn-laws "the average money income of the people has more than doubled; while the price of almost all important commodities, except animal food and houseroom, has fallen by one half or even further. It is true that even now, if wealth were distributed equally, the total production of the country would only suffice to provide necessaries and the more urgent comforts for the people....The average income per head in the United Kingdom, which was about £15 in 1820, is about £33 now; i.e. it has risen from about £75 to £165 per family of five. There are not a few artisans' families, the total earnings of which exceed £165, so that they would lose by an equal distribution of wealth: but even they have not more than is required to support a healthy and many-sided life." In the third edition, 1895, this estimate

III, xiv, 5. If Britain is to hold her place in the world, her growing population, ever more dependent on external supplies of food and materials, must be provided with enlarged and improved mechanical appliances for production; and therefore ever greater net annual additions to her accumulated capital must be made in order that her total real income (or National Dividend) may be as large relatively to her population as was that of an artisan's family before the war: and a new spirit, in harmony with the patriotic emotions of the war, must rid her of her Achilles' heel¹. If everyone will get as much work as possible out of his plant while in charge of it; and, in those industries in which the plant is very expensive, will agree to work in shifts, so as to keep the plant at work for twice as long as the normal working day, then wages will be raised automatically far above their present level: and yet there will be an increase in the inducements so to develop plant as to greatly increase the National Dividend. Then all workers may receive as good pay as the artisan does now: and the artisan, together with those office workers who are on about equal level with him in the faculties required for their work, may speedily rise much above it².

Thus the future may be made brighter than the past by greater community of thought, action and sympathy; by a fuller recognition of the dignity of man, and cordial cooperation

of £33 per head was raised to £40; and in the seventh edition, p. 713, the guess is hazarded (on much slighter foundations than those of Prof. Bowley's study) that the income of the 49,000,000 inhabitants of Britain may be taken at £2000,000,000 or £40 a head; which was less than that of many artisan families even before the war, when the purchasing power of money was still high.

¹ See above, p. 641 n.

² The economy to be obtained by compelling a single outfit of untiring mechanical plant to work twice the number of hours which can reasonably be required of human beings, who are easily tired, and whose life needs to be developed outside of their work as well as in it, is urged by Lord Leverhulme in *The Six-hour day*. He insists, as many others have done, on the wastefulness of the British method of keeping the supply of plant and horse-power per thousand operatives somewhat below the American standard. It is suggested in my *Principles* (pp. 695—6 n.) that two sets might work alternately. With a seven-hour day one might work from 6 a.m. to 9 a.m. and from 12.30 to 4.30 p.m.: the other from 9.15 a.m. to 12 15 p.m.; and from 4 45 p.m. to 8.45 p.m.: they might change places at the end of each week or month. With a six-hour day no one need work more than three hours continuously.

among all the various ranks of industry, and by a continued development of the fundamental principles of the Whitley Report. III, xiv, 5. When man has been raised to a level far higher than he has yet attained, he will have raised the State also to far higher possibilities than it has yet reached: and then industry is likely to be recast on some plan not yet in sight. For human nature has developed new possibilities in almost every generation under quiet and orderly conditions; and it has progressed very fast in this country during the last fifty years.

One indication of this progress is the increasing solidity and breadth of socialistic schemes: for instance "labour" is no longer regarded as exclusively manual; and the Guilds now suggested are to make use of the best scientific, technical and administrative ability that they can attract. But it seems that these new schemes, like those of earlier times, look only at the surface difficulties of business; and do not attempt with patient care to track out the effects of effects, and the causes of causes. In particular they appear to regard economic progress as a thing that goes almost of itself: they take little thought for its dependence on deep insight, on farseeing fore-sight, on sound judgment in selecting new developments of technique and organization, and on the courage of leaders of industry in taking selected risks on their own shoulders. Even the most advanced schemes for National Guilds seem to ignore the fact that the State has been a borrower rather than an accumulator of capital; and to take little or no account of the superhuman ability required on the part of those persons in whom the chief functions of "the State" are to be concentrated, when called on by a Guild to advance more capital in order to replace some that has been lost in an ill-fated venture, or to enable some new venture to be put through. No doubt the State, like man himself, is to be born anew in the new age; but no definite provision is made for this re-birth; and meanwhile the intimate dependence of progress on the right taking of risks, seems to be ignored¹.

¹ But such schemes may point the way to solid progress in a later age, when some oversights have been corrected by experience. And bold imaginations, though unbalanced and dangerous as guides, often contain a solid kernel, from which are evolved in a later age important results, far removed from the aims with which they were originally associated. So a short account is given in

III, XIV, 6. 6. *Some general conclusions. Sectional, national, and international interests. Anglo-Saxons have generally eschewed the more antisocial forms both of competition and combination. Collective control of industry would be unfavourable to the best selection of men for its most responsible work.*

In this Book and in Book II we have been occupied chiefly with the relations of sectional to national interests. But it will be well to revert for a while to the point of view of Book I, from which national progress was seen as in great measure dependent on world progress; and to consider the partial likeness, which the relation of national to cosmopolitan interests bears to that between sectional and national interests.

Many sectional interests within a country are concentrated in particular places, in consequence partly of unequal distribution of mineral and other natural resources, partly of more or less accidental localization of special industrial aptitudes. But special local interests are generally recognized as definitely subordinate, on moral and on political grounds, to those represented by the central Government: while devotion to national interests, to the almost complete exclusion of those of the rest of the world, is implicit in much ordinary conversation, and is proudly asserted even by some thoughtful people.

The recent growth of a strong sentiment in favour of a League of Nations, may ultimately have some power to foster cosmopolitan interests. It is an evidence of under-currents of thought and feeling, which were felt at the Universities and elsewhere half a century ago, and are now becoming prominent. Science is already almost completely international: nearly every change of political thought and sentiment in any one western country soon spreads some waves over others; and the same is true of progress in industrial technique. Capital is also in great measure international; facilities for travel and the transmission of news by wire and by air are enabling the new education of the masses of all western peoples to become increasingly international. Recent discussions, arising out of the emergencies of the great war, have quenched many jealousies,

pp. 657—660 of some proposals for setting up National Guilds in the place of the present mechanism of industry and trade.

and have effected friendly compromises in regard to conflicting interests: but yet the time seems far off at which each country will deliberately abstain from any action, which would bring benefit to her, on the ground that it would cause somewhat greater detriment to others. If that end is ever reached, the way to it may perhaps be led by the increasingly independent, but also increasingly cordial, relations between Britain and her Dependencies. In all international trade policies, her great Dominions are able to take full care of their own interests: but her Crown Colonies and India are not in equally strong positions; and therefore Britain is morally bound to attach to each of their interests at least as great a weight as if it were her own¹.

In Books II and III we have been increasingly occupied with the observations that the term "competition" has many different interpretations in common usage; that the same is true of the term "combination"; and that consequently indiscriminate praise or blame of either is futile. Varieties of competition seem to fall in the main under one of the following three heads: (a) friendly emulation, implying cooperation in case of any need, as when two friends rival one another in the ascent of a difficult mountain: (b) ordinary business competition, in which each of several neighbourly producers or traders endeavours to get ahead of the others; but neither makes, nor tolerates the making by others, harsh judgment of their actions: (c) competition with destructive aims, in which each would go to some trouble and expense in order so to hurt others, as to clear the field for his own advance. The largest and the most savage developments of destructive competition on record have been incidents in campaigns for crushing inconvenient competitors by a Juggernaut car of combination striving for monopoly. And it is noteworthy

¹ In particular no plea should be entertained for Protective taxes on imports into Britain competitive with some of her own industries, however strong the national need for developing them may be; unless a similar principle is applied to selected Indian manufactures, whose youthful strength is insufficient for competition on nearly even terms with rival imports from Britain and other western countries. These considerations are developed a little further in pp. 26—9 of a Memorandum by the present writer on the *Fiscal Policy of International Trade*, printed by order of the House of Commons, C. 321 of 1908.

III, XIV, 6. that some vehement strategic denunciations of competition as essentially malign and rancorous, have been uttered by advocates of combination for the purpose of raising prices to artificially high, if not to monopolistic levels.

Again, the term "combination" has three similar connotations. It is often applied to constructive association¹. Sometimes it refers to joint action for the regulation of prices; as for instance by cartels or trade unions, which keep the door open to all *suitable* applicants for admission, but nevertheless set themselves to push up the prices of what they have to sell: sometimes it suggests deliberate destructive competition by a group of businesses aiming at monopoly. So long as the term "suitable" in the second of these connotations is interpreted with reference to the interests of the community in obtaining good service, and without any design to stint supply in the interests of a section, it does not offend against the fundamental ethico-political rule that everyone should have free access to the highest orders of work of which he is capable—*carrières ouvertes aux talents*.

In this matter manufacturers and other employers are more directly—though not more deeply—interested than the nation generally: and they seem to fail in their duty to themselves and to the nation, when they unconsciously countenance evil developments of trade-union policy, by setting up associations of the combative order of German cartels. An urgent obligation lies on the State to search out and correct such malign practices by methods of the same thorough and uncompromising character as those of the American Federal Commission: for by such means only is it possible to allow unfettered liberty of association for constructive purposes, while curbing antisocial devices.

There is indeed but one moral rule and there should be but one aim of authoritative control, for the operations of trade, for the attitude of employers towards employees, and for the attitude of employees to their work. Every sort of association that enriches life by giving to the individual broader, and therefore presumably higher, interests than those which directly concern his own well-being, is to be cherished: but any tendency to curtail important activities unduly (*i.e.* before they have reached the point at which

¹ Such as that described above, pp. 603—616.

fatigue becomes a serious evil) in order to obtain an artificial advantage in bargaining, is to be condemned as antisocial III, XIV, 6.

The predominance of constructive over destructive forms both of competition and of combination is even more important to Britain than to other countries: for her responsibilities in the world are far greater relatively to her natural resources than are those of any other land. Because she has achieved so much relatively to her resources, she is bound to foster her acquired sources of strength with exceptional vigilance and energy.

She needs to obtain vast quantities of food and material from countries, that have relatively large natural wealth, by exporting to them commodities made by such excellent appliances that her working classes will be able to obtain the larger necessities and comforts of life—even after allowance for expenses of transport—at the cost of no great amount of labour of her own. If her industries follow America's lead in largeness of supply of plant to each worker: and if the short-sighted selfishness which has developed the evil practice of stinting output (whether by trade unions or by employers' associations on the cartel model) be abandoned, then she may prosper: but she may rapidly fall from her high place, if she becomes slack in any respect.

A characteristic of the last few decades has been the increasing affinity between industrial evolution, and progress towards government of the people by the people: and therefore it is worth while to reflect that the special qualities, which made England an industrial leader, were shown in her political evolution during many centuries, in which her industries lagged behind those of other lands¹. They had indeed deeper roots and acquired much larger scope, than those that were needed by the earlier forms of merely industrial organization; and their first great achievement was to enable her gradually to develop true popular self-government on a large scale. A bold guess may be hazarded that a thousand years hence, when all economic institutions,

¹ See above, pp. 35—39, and 179: also below, pp. 700—718.

A tribute should also be paid to somewhat similar national characteristics which have preserved the independence of Switzerland; though the geographical conditions, which have helped her to maintain it, have also confined its influence within narrow bounds

III, XIV, 6. and nearly all economic rights have been remoulded several times, a chief outstanding fact in the history of the past will be the spread of the Anglo-Saxon language over a great part of the world, regarded as the result of the early faculty of the Anglo-Saxon temperament for ordered freedom.

Self-restraint in the statement of claims, and resolute persistence in those which have been finally approved, have generally enabled Anglo-Saxon peoples to move forwards steadily: retrogressions have occurred, but they have been rare. And, as an indirect, but perhaps necessary, consequence of this character, both competition and combination in Anglo-Saxon countries generally have been more inclined to construction than to destruction. It is indeed true that some violent ebullitions of competition, chiefly in pursuit of monopolistic combination, have occurred in America: but they do not appear to have been numerous relatively to the rapidity of growth and change in her industrial structure, to which no near approach has been seen elsewhere. America has attracted the most eager and excitable strains of the Anglo-Saxon, the Celtic, and Slavonic races: and yet Anglo-Saxon moderation and stability have enabled competitive and monopolistic abuses to be kept within relatively narrow limits, with but little direct intervention of authority. The chief weapon of the Bureau of Corporations has been publicity.

So far we have been concerned chiefly with movements, which have passed, with more or less success, through the ordeals of sustained working and many-sided experience. But we may now allow ourselves to venture a little on untried ground, and speculate as to the future; not being deterred by the reflection that the fond fancies of one age as to noble possibilities of social development have not very often evoked as much approval as mirth in later generations.

We may begin by reference to National Guilds: for they claim with some partial justice to be developments of movements, which may be traced in nearly all phases of civilization during more than two thousand years; and to have earned some sort of certificate from the past. In fact however those parts of their policy, which are at once most novel and most alluring at first sight, seem on consideration to involve grave hazards to social stability and progress.

7. *National Guilds.* *Read*

III, xiv, 7.

It has already been noted that the (Whitley) Works Committees and Joint Industrial Councils embody something of a movement in the direction of loyalty to others engaged in the same *industry*, by the side of, and occasionally in preference to, loyalty to the same *craft*. The claims of industrial Guilds have drawn support from this movement; which belongs especially to the last few decades, and is in the reverse direction from that which set in a century earlier. For, as the eighteenth century passed into the nineteenth, the dominant industrial unit ceased to be a workshop, owned by the leading craftsman in it: and after two more generations had passed the employer, even if he had been a working man himself, was chiefly concerned with the organization and the finance of a large establishment; though, especially if engaged in engineering, or allied work, he would of course supplement technical studies by some manual experience¹.

Towards the end of the nineteenth century, the number of tasks handled in the same factory became so great that the various craftsmen engaged in them had scarcely any common bond: each craftsman in the factory looked to his own Union for guidance and aid in regard to pay and other matters. Loyalty to craft gave scope to some of his higher emotions: but the general interests of the business in which he was engaged did not appeal strongly to him. So the suggestion that the State should own all capital and directly control all industry appealed to his idealism, as well as to his desire for greater material comfort: and he was inclined to approve the mystic reasoning with which Marx "coquetted," and which claimed to prove that though a worker has a right to his own earnings, yet any part of them which he or any one else uses in facilitating production, encroaches on the rights of the State. He often regarded the Marxian doctrine, that all profit derived from private capital is "theft," as an overstatement of an important

¹ Some employers are skilled craftsmen. One, whose engineering works were large and various, told me that he had mastered his whole plant: he could step into the place of any operative, and show him how to do his job easily and neatly

III, xiv, 7. truth. So far socialistic tendencies went very much on the same lines in most Western lands.

But the attitude of Anglo-Saxon workers differed from that of Germans and others, who rejoiced in the apparent vigour of autocratic Government, and cared little about freedom for its own sake. Fabians made something of a compromise with pure Marxian doctrine. But in recent years their influence has declined in Britain relatively to that of a school, which insists that though collectivism might increase the material comforts of the workman, it would not develop his self-respect: the postman is not made free by escaping from the control of an employer, who may be sympathetic; and coming under that of officials, who must obey orders, and have no power to indulge their sympathies.

The new movement therefore puts into the forefront the dignity of the worker, whether with hand or head, as a man: it claims thus to evoke his full energies and give them free play: and finally so to increase production that material well-being would be raised generally, even though the State, while annexing private capital, give in return bonds of its own which will yield an income equivalent to normal interest on the capital for a period of say forty or fifty years. Business men may continue their activities in the service of their respective industries: but the whole of the operations of each industry will be controlled by those engaged in it, who in their collective capacity, as a *Guild*, will pay rent to the State for the means of production.

On this plan control is to be guided by the highest available technical knowledge and business experience. For, though the State takes over all business plant, with some sort of compensation to its owners, the Guild is to avail itself of every suitable faculty that will participate in its task. While all its members vote on its main problems, the policy thus directed will be carried out by those whom the Guild may consider most capable: whether they are compensated ex-capitalists, experienced managers; or manual workers, who have shown high faculty under the new conditions. Thus the plan is on a different intellectual level from those which regard the whole product of industry as belonging to the operatives; and think but lightly

of any work that is not manual. It leaves trade-unions, or III, xiv, 7. their successors, in full control of the internal management of particular crafts, but the main organization of industry is to be based on "function"; and there are many industrial functions beyond the scope of any one craft, and therefore of any trade-union.

In order to avoid arousing strong opposition, while the movement towards the goal is still rather weak, caution is recommended. "The keynote is to be Encroaching Control": but, when the goal has been reached, "economic sovereignty is to be shared between the Guilds (with whom will lie the initiative in the economic no less than in the purely industrial sphere) and the State (which stands by as guardian of communal interests that might otherwise be lost sight of)¹." As a means to this end, the shop committees are to begin by making impossible the position of any foreman, whom they do not approve, "such passive approval to be transformed at the earliest possible moment into active election by the workers themselves, so that the shop steward becomes the officer not of the Union only, but of the industry." "Collective Contracts" arranged by the Union, which itself distributes the money received, are to be increasingly substituted for individual contracts. "As the functions of the employer pass from him one by one, his fundamental character as a profiteer will become more obvious...and this will fatally impair what is even more essential to his power—his prestige²."

The scheme is thus elaborated by Mr G. H. D. Cole: There is to be set up in each works, subcommittees elected by all the workers in the several shops; and a Works Committee elected, directly or indirectly, by all the shops. A District Committee is to consist of members elected by the several Works Committees, together with craft representatives elected by the local crafts. These are to lead up to a National Guild Executive and a National Delegate meeting of representatives of each craft in each district. Foremen and Managers are to be elected by those manual and clerical workers respectively who would serve under

¹ Bechhofer and Reckitt, *The meaning of National Guilds*, 1918, pp. 284, 5.

² *Ib.* pp. 286, 7. A writer is quoted with approval by them (p 335) who says:—"A corrective for judicial arrogance will need to be discovered: perhaps...by rendering the Judiciary elective...by Guild and Civic Congresses"

III, xiv, 8 ✓ them, for each works and for the whole Guild. Similar provision is to be made for experts, for each works, for each district, and for the whole country¹.

The Central national control of all industries is to be in the hands of (a) a Guild Congress representing producers; (b) Parliament representing "the people as consumers"; and (c) a somewhat mysterious body, on which "not merely all the citizens, but all the citizens in their various social activities are represented"; which is on occasion to settle controversies between the Guild Congress and Parliament². He insists that "the Collectivist Utopia would be a world of public trusts: the Guild Utopia will be a world of producers' cartels, worked in the interest of the whole community. If the Guild is not to fall into mediocrity it must preserve the distinctness of works from works, of locality from locality and of nation from nation. It is the organization of human differences on the basis of human identity³."

In the present economic system, discipline is enforced in great measure automatically "by an unseen hand." It is often rather harsh; and its severity calls for frequent mitigation by human effort. But if automatic discipline is removed, an all-pervading authority must be invoked to check abuse in small matters as well as in large. Unless Guild organization develops some notion, of which it at present seems to have made no forecast, it may probably drift into chaos, from which relief can be found only in a military despotism⁴.

8. *Possibilities of the future.*

Let us now imagine some possibilities of the future, which may be attained without casting the experiences of the ages to the winds; and without supposing that methods of organization,

¹ *Self-government in industry*, 1918, pp. 257—268.

² *Ib.* pp. 86—88.

³ *Ib.* p. 154. Marx might have envied this phrase.

⁴ In this matter, as in some others, Mr Cole (*Self-government in industry*, pp. 234—9) seems to follow closely in the paths of St Simon, Fourier, and other early socialists of noble character and vivid poetic imagination. The last new version of the Golden Age is to bring out latent powers of goodness in human nature: the task of regulation is to be as simple as it would be if all men were as unselfish and earnest as the writer himself; the vast difficulties of modern business organization are so completely left out of account as to imply that they have never been seriously studied.

which have never attained lasting success on a considerable III, XIV 8. scale, will prove permanently efficient under the wand of a socialistic prophet.

Stress must be laid on the extent to which industrial strength is being increased by the broadening of the basis, from which can be drawn men endowed with the high faculties needed for the more responsible posts in industry. Until recently the supply came almost exclusively from a rather thin upper stratum of the population. It alone had a great surplus of material resource over what was needed to supply the necessities of life; and sufficient freedom from oppressive manual toil to be able to devote much mental energy, save in exceptional cases, to the larger problems of thought and work.

But it has now a larger sense of social responsibility; and, aided by the application of natural forces to much of the heavy work that wearied the manual worker, it has contrived larger opportunities for the masses of the people to develop the high faculties born in them: and the State can now look to the main body of workers as the source of much of that higher administrative work, which used to belong almost exclusively to the well-to-do. This change was emphasized by the Whitley Report, and it will be promoted by Joint Industrial Councils; though their efforts may not reach far towards a wide dissemination of the supreme tasks of conceiving new ventures, weighing their promises and their risks, and making a wise selection. There is a rapid increase in the number of those who have the strength and the elasticity of mind and character needed for the larger responsibilities of industry: but unfortunately the probability that the best men will be brought to the front is being diminished by several causes.

Records of a man's work in one grade of industry throw but little light upon his fitness for a higher grade, in which different faculties are required. Everything, that is within a man, does indeed come out in close intercourse with those whose qualities are at least as high as his: but in a large business those, whose own qualities are high, are seldom brought into much direct contact with the main body of workers. The foremen and other officials of medium grades are not always quick to appreciate fully any higher qualities that may be latent in

III, XIV, 8. ✓ a young artisan: they judge him probably by his output; but that, though a good measure of his value as an operative, is a very poor measure of his higher capabilities. The small employer, who knew all his men, could draw a broad distinction between the value to the business of a particular operative, and the value of his work: and would go out of his way to retain anyone who, though not specially expert and quick with his hands, would be likely to develop such faculties of judgment and resource, that considerable responsibilities might be thrown upon him later on; and thus the man who had latent high qualities would be drawn upwards. But such a man might not be much liked by a foreman or other minor official of a large business, whose horizon is more limited than his own: and his value is likely to be reckoned 'merely by his output¹.

This likelihood, that in a very large business the latent capabilities of a man will fail of recognition by his immediate superiors, is to some extent both a cause and a justification of a tendency to promote according to seniority: especially if the work to be done is such that the output of any one man is not easily to be distinguished from that of others. As is well known, this tendency becomes an almost absolute rule in many kinds of employment under Government: for officials, who have made their way by seniority, are naturally inclined to promote by the same rule². National Guilds propose at starting to annex the services of men who have been trained in independent businesses: and that device may serve for a time. But when those men have gone, and the Guilds have to train their own leaders, they are likely to find unexpected difficulties in the causes just indicated.

To sum up this group of considerations:—Moral and economic advances depend increasingly on the extent to which

¹ This is a different thing from saying that his value would be reckoned in proportion to his output. For it is obvious that the work of a man in charge of very expensive plant, who gets out of it a quarter as much again as another, may be worth twice as much as the other one, if neither has any latent capacity for higher work than that on which he is engaged. The phrase "equal pay for equal output" has its uses, but is liable to be grievously misapplied.

² Reference may be made in this connection to the first and fourth Sections of Book II, Chapter x, see also pp. 580—4.

the most strength-giving influences can be brought to bear on III, XIV, 8 character: and among these a chief place must be assigned to the selection of men for responsible posts in accordance with indications that they are likely to develop in those posts faculties, for which they have had relatively small need in the past. Only independent heads of business are in a position to make such a selection with free hands; and only they have full incitement to exercise their best energies in the selection.

But yet there is room for large hopes. Leaving wars out of account, we may perhaps reasonably hope for a gradual extension to nearly the whole population of those resources and opportunities, which are needed for comfort and for the full and harmonious development of the higher human faculties, on the following conditions: (i) that mankind set themselves greatly to increase the supply of mechanical appliances, which are to raise the condition even of the humbler classes of mankind by acting as slaves for them: (ii) that they make these slaves so numerous and powerful; and manage to keep them at work for so long hours by alternating shifts of attendants, that even the lowliest of human operatives need work only during short hours; though with energy while at work: (iii) that they raise the level of general education till there are scarcely any adults, who can only do such simple work, as is within the capacity of a properly guided mechanical slave: (iv) that they develop assiduously the channels by which those who are endowed with high faculties of thought and invention, of enterprise and administration, may rise rapidly to posts of responsibility commensurate with their qualities: (v) that they keep constantly in view the broad distinction between tasks of orderly business management, which conscientious officials perform adequately; and tasks of constructive enterprise, on the bold and enlightened discharge of which economic progress mainly depends, though they are often beyond the power of the official, and even uncongenial to his temperament: (vi) that they recognize (a) that the most progressive business men value the freedom to take risks on their own account, and to earn a reputation for able leadership, by success in leadership which cannot always easily be proved otherwise than by its pecuniary results: but (b) that an adverse

III, XIV, 8 tide which retards all rowers does not materially diminish the zest of emulation in a race; and therefore (c) that enterprise may be maintained, even though those who are rich are required to make large contributions for national purposes: (vii) that they remember that all taxes on resources, which might probably have been used for the increase of the material slaves of man, are prejudicial to the whole people; and in some respects especially prejudicial to the poorer members of it: and that therefore the produce of exceptionally heavy taxes on capital, or on income derived from it, ought not to be used to defray *current* expenditure: (viii) that at junctures such as the present, when the national burden of debt is an enormous heritage of evil for coming generations, they insist that the produce of all taxes, which tend considerably to check the accumulation of private capital, be devoted to the reduction of that debt: (ix) that they take account of the tendency of capital to emigrate from a place in which it is unjustly handled; though a country, which nourishes and stimulates capable business enterprise, will continue to attract capital, in spite of its being subject to somewhat heavy taxes there: (x) last, but not least, that employers, as well as other capitalists; employees; and in short all classes and groups, eschew all practices which tend to raise the market values of their services or products by making them relatively scarce.

The problem of social aims takes on new forms in every age: but underlying all there is the one fundamental principle:—viz. that progress mainly depends on the extent to which the strongest, and not merely the highest, forces of human nature can be utilized for the increase of social good. There are some doubts as to what social good really is; but they do not reach far enough to impair the foundations of this fundamental principle. For there has always been a substratum of agreement that social good lies mainly in that healthful exercise and development of faculties which yields happiness without pall, because it sustains self-respect and is sustained by hope. No utilization of waste gases in the blast furnace can compare with the triumph of making work for the public good pleasurable in itself, and of stimulating men of all classes to great endeavours by other means than that evidence of power which manifests

itself by lavish expenditure. We need to foster fine work and fresh initiative by the warming breath of the sympathy and appreciation of those who truly understand it; we need to turn consumption into paths, that strengthen the consumer and call forth the best qualities of those who provide for consumption. Recognizing that some work must be done that is not ennobling, we must seek to apply the growing knowledge and material resources of the world to reduce such work within narrow limits, and to extirpate all conditions of life which are in themselves debasing. There cannot be a great sudden improvement in man's conditions of life; for he forms them as much as they form him, and he himself cannot change fast: but he must press on steadfastly towards the distant goal where the opportunities of a noble life may be accessible to all¹.

Organic life on this little planet, which has been inhabitable for only a few thousand years, may indeed perhaps claim to have made fair progress, morally as well as physically, in a minute fraction of the period during which the stellar universe is known to have been nearly in its present form. Other planets, which have been suitable for the maintenance of organic life during much longer periods, may have gone a long way towards solving socio-economic problems, of which we are only able to touch timidly the outskirts. In particular they may have probed many of those responsibilities of the individual to the State and of the State to the individual, as to which we have learnt so much in the last few generations, that we appear to have made some considerable way towards fathoming the depths of our ignorance. But it seems that, the longer we ponder, the greater must be our diffidence in prediction, and the more profound the awe with which we regard the Divine Governance of the Universe.

¹ This paragraph is substantially reproduced from an article on "The old generation of economists and the new," published in the *Harvard Quarterly Journal of Economics* in 1897: and something more is said on similar subjects in the last chapter of my *Principles of Economics*.

III, XIV, 9. 9. *Nature and limitations of the constructive work of a democratic Government in regard to industry.*

To return to the hard realities of actual life:—It has been indicated¹ that, although the semi-military organization of Imperial Germany was well adapted for the methods of bureaucratic control, other methods are needed by a nation which governs its own Government: but a little more must be said on this subject.

Each of the numerous Government offices in Westminster is in some measure bureaucratic. Its officials have for the greater part been trained from early manhood onward in its work; and promotion has been governed by seniority, with some little reference to the claims of exceptional ability. In broad matters however the ultimate decision depends on a Minister, whose knowledge of the technique of his Department is seldom great. He is likely to bring a fresh and alert mind to its problems, but he has many other things to think about: and he has done his duty well, if he listens carefully to the suggestions of his chief subordinates; and endeavours to bring the Cabinet, and afterwards Parliament, to adopt such of them, as seem to him well conceived and likely to prove beneficial. His competence to decide on its business problems is therefore likely to be inferior to that of a man of equal natural ability and energy, who has given his whole time and strength to the thoughts and the actions that relate to the same business problems; and who has tested his judgment by applying it to many various risks which appertain to them, and which he has borne on his own shoulders. A Minister must continue to devote much of his energy to the great tasks of political statesmanship; and must apply those faculties of persuasive oratory, to which his high position is largely owing, in advocating the chief measures of general public policy, on the success of which the Ministry depends for the maintenance of its position. That is work of the highest importance: but in regard to his responsibilities as head of a vast business it is a grievous, if not a disastrous hindrance.

¹ Below, pp. 350, 1.

Consequently, for good and for evil, the main effective responsibility for the conduct of the higher business of a Department rests with its chief permanent officials. They have perhaps entered on their work with eager enthusiasm: but enthusiasm is seldom in high favour with their seniors. For, though Ministers are likely to select as private secretaries men of alert and enterprising minds, they often acquiesce in the common rule of promotion by seniority, save in exceptional cases: and this rule perpetuates itself, because those, who have prospered under it, appreciate its convenience more fully than its shortcomings.

Therefore a new technical advance is apt to be regarded coldly by a Government Department; for regulations which have been worked out with much care for the control of old established methods, may not be applicable to the new method: so it is likely to be treated as an enemy not exactly of the public, but of the public as represented by the Department¹.

But when private enterprise has toiled and invented and experimented and failed; and again invented, and experimented, and perhaps succeeded a little; and then has further invented and experimented and quite succeeded, the public official enters on the scene. He endeavours to absorb the latest ideas: he brings the might of a bottomless public purse to bear on their finance; and he annexes some leaders of the new industry to carry the chief burden of the technical side of the work. If the enterprise needs the use of public rights of way—as for instance tramways and electric light do—he has so great an advantage of position, that his victory is almost inevitable: and indeed in

¹ For instance "the officials responsible for drafting the London Building Act of 1894, had in view nothing more advanced than the time-honoured method of brick and stone construction, and were apparently unaware of the fact that steel-frame construction and reinforced concrete construction had already been applied with satisfactory results as regards safety, durability and economy both on the Continent and in America. As neither of these methods could be employed with economy under the requirements of the Act, steel-frame construction remained under a ban until 1909, and reinforced concrete construction was similarly handicapped until 1915." *Engineering Supplement of the Times*, March, 1918.

The following is a representative case. An intelligent Borough Engineer had his attention called to a dangerous place on the road. Reference being made to an inexpensive remedy, by which he held that most of the danger would be removed, he added—"I dare not do it. An accident might still happen: and then I should be held responsible for it: a thorough remedy would be very expensive. As things are, an accident there would not hurt me: for I should merely have left the case as I found it."

III, XIV, 9. such cases private enterprise may be patriotic enough to regard its own despoilment with satisfaction. Even in the railway industry, in which Government control has some exceptional advantages, it seems to have borrowed almost every new idea from independent work¹.

✓ The industries in which Government Departments and Local Authorities have succeeded are few in number, but important. They are mainly concerned with "things that sell themselves"; that is, things which are in large demand, and more or less standardized by natural causes. The chief of them are connected with facilities for transport, and the distribution (by aid of way-leaves) of water, light and power: they all meet elementary needs; call for little or no adaptation to changing habits, or varying tastes; and make use of plant, the central ideas of which have been worked out by private enterprise and gradually become common property.

State Management possesses advantages, where many routine operations are "performed under the public eye, or for the service of individuals, who will immediately detect and expose any failure or laxity"; especially if "there is but little capital expenditure, so that each year's revenue and expense shall represent with sufficient accuracy the real commercial conditions of the department." These conditions, indicated long ago by Jevons², are fulfilled in an eminent degree by the postal business: and the first, though not the second, is fulfilled by all other important businesses in which State Management has had much success.

It may be noted in passing that mining does not seem to belong to this class. For, though the miner merely transports a product from one place to another, and does not make it; yet the selection and organization of underground routes require

¹ "The telegraph, the telephone, the electric light, the railroad track, the locomotive, the air brake, the block signal system were all introduced by private companies. In most cases it took Government experts from ten to twenty-five years to discover them after they had been in use on private lines": said President Hadley writing in the *Yale Review*, Feb. 1896, p. 406. Many Municipal tramway schemes have failed: but private enterprise, which intimated them, has brought their technique on so far, that the predominant advantage, derived by local authorities from their ownership of the roads, has set them now in the saddle: and the victory, thus almost forced upon them, has been exploited by eager politicians as affording a strong argument in favour of Government businesses in general.

² See *Methods of Social Reform*, p. 338.

decisions to be taken on important details, that are presented III, XIV, 9. in manifold combinations and are not easily to be reduced to rule. There is therefore no cause for surprise in the fact that even the strong German bureaucracy (before the war) was found to get but small profits from its coal mines, while yet it was not generous to its employees¹.

But the relations among the various Departments of a modern Government are numerous: and when a much vaunted public enterprise has turned out badly, the resulting losses can be so distributed and buried under a mass of Departmental detail, that their true history cannot be unravelled without the aid of a semi-judicial inquiry: in fact, it generally remains obscure; and those, who are responsible, escape their just censure².

Thus Governmental administration is apt to suffer from lack of concentration of authority and lack of elasticity in methods of procedure. Very few large practical problems lie wholly within the competency of any one Department: and a decision on some trifling issue may not be reached, till the correspondence about it among various offices in Whitehall has cost the nation many times as much as the whole value of the matter in hand. If that matter is of private, as well as public concern, the delay and waste of time to individuals lend support to the belief that it is better to suffer some hurt from official control or charges, than to strive for a remedy. Of course, such

¹ See above p. 574 fn. At the time of going to press, evidence before the Coal Commission is making prominent many of the evils that have arisen or might arise from local coal monopolies; and from cheap railway charges for long distance coal transport, by which such monopolies are to some extent curbed. Something has also been established as to the good and evil of concentrated private ownership under State control, and as to evil that might probably have been caused by nationalization of the mines. Much enthusiasm, but very little solid argument, has been prominent in pleas for nationalization.

² Difficulties of this kind have obstructed the formation of a good judgment on many of the ventures of the Coalition Government during the war: the unwieldy majority, which was awarded to it under the supreme necessity of presenting a united front to the foe, has quenched inconvenient inquiries. Transferences of control (often no doubt made for sound reasons) from one Department to another have obscured accounts; as for instance when the Shipyards at Chepstow and Beachley passed from the Ministry of Shipping to the Office of Works. And during the war, when the Government was spending two or three thousand millions a year; wasteful duplication of work was rampant: and "the accretion of Departments, their clashing and overlapping," became the subject of general comment.

III, XIV, 9, troubles are great in a democratic country, where permission to alter established practice may require the sanction of a Minister, who has no technical knowledge of the matter; and who may be about to move to another Ministry, or to go out of office. These and similar difficulties led to the appointment in 1917 of the Machinery of Government Committee; whose Report is much to our present purpose. It lays stress on the fact that the centre of each Department's work ought to be an organized study of some one of the broad functions of Government; and not of the activities of Government in regard to the interests of particular classes of persons¹.

This fundamental unity in regard to the matters entrusted to a Department being secured, it may reasonably be required to have recourse to "the advice and assistance of advisory bodies so constituted as to make available the knowledge and experience of all sections of the community affected by its activities": but "there should be no omission in the case of any particular service of those safeguards which ministerial responsibility to Parliament alone provides." This last suggestion is enforced by the weighty observation that "a more efficient public service may expose the State to the evils of bureaucracy, unless the reality of Parliamentary control is so enforced as to keep pace with any improvement in departmental methods²."

If the applied science of administration is mastered by Departments; and members of Parliament generally lack the leisure, the inclination, or the ability to form independent judgments as to recommendations made by Departments in regard to broad problems of public policy; then Parliament will in effect often do little more than register the decisions of a Bureaucracy: and democratic rule will be stultified by the absence of an adequate response to the question: *Quis custodiet ipsos custodes?* Government Departments are chief custodians of the interests of the nation: Parliament cannot do that work; but its duty is to control that work: *i.e.* to make it efficient, to prevent its being obstructed by internal friction, and to resist unnecessary expenditure of public money. To do this Parliament needs to take its own arduous functions as seriously as Bureaus need to take theirs.

¹ [Cd. 9230], 1918, § 18.

² *Ib.* pp. 11 and 16.

We pass to scientific studies in the narrow sense of the term. III, XIV, 9. The National Physical Laboratory and the Committee of the Privy Council on Scientific and Industrial Research are recognized as doing work of the highest value. But there is danger that, when relying on private advice, a Department or the Cabinet may be influenced by biased opinion in deciding what industries should be aided on account of their exceptional importance as "key" or "pivotal" industries. And yet the State has clearly some duties in the matter; especially when supporting independent organized effort¹.

In so far as State assistance is given to such developments by direct money grants, Parliament is likely to be vigilant. For this, among other reasons, such grants are to be preferred from the national point of view to the taxation of imports that compete with the products of essential industries: though in a few cases a combination of the two plans may be necessary. The exclusion of particular imports often tends to divert employment from the energetic industries, that make for export, to those which are favoured by the exclusion: it does not effect any net increase of employment, and its indirect costs to the nation are frequently underestimated, because they are not conspicuous. On the other hand, the whole costs to the nation of direct subsidies are definite and conspicuous: those who are favoured by them are brought immediately under the eye of the people, and their accounts are liable to public audit. The danger that a subsidized business may abuse monopolistic power is so obvious

¹ See above pp. 179, 180. Among the industries now prominent in this connection are those connected with tungsten, magnetos, optical and chemical glass, hosiery needles, thorium nitrate, certain gauges, and many drugs. But it is recognized that technical, military and even political developments may cause rapid changes in such a list: and therefore it is proposed that a Special Industries Board, consisting of commercial and industrial experts, in association with a Department of State, shall be set up to work in close relation with the Department of Scientific and Industrial Research, and with others interested in the development of industry. It should recommend on occasion that financial assistance should be given to vigorous firms, which are pioneering the way in such industries, by studies, experiments, and production, that may be amply remunerative to the country as a whole, though not to the pioneers. The functions of the State in this matter have been made urgent by a sudden increase in the dependence of military operations by land, by sea, and lastly in the air, on scientific and technical developments, some of which were not in sight even a few years ago. In case of urgent need only, "the Government should itself undertake the manufacture of such articles as may be essential for national safety." *Report on Commercial and Industrial policy after the war* [Cd. 9035], 1918, pp. 31, 32.

III, XIV, 9. as to be unlikely to escape the notice of the official investigations, to which it must be in any case submitted¹.

It is perhaps true that the power of Government to control the administration of a great Departmental business is on the increase: that the power of the nation to govern its Government is on the increase; and that the number of giant undertakings which have the apparent (though perhaps not the real) maturity of standardized routine method, needed to make them in some measure suitable for Governmental ownership, is on the increase. But it seems to remain almost as true now, as in former times, that the heavy hand of Government tends to slacken progress in whatever matter it touches; and finally that "business influences are apt to corrupt politics; and political influences are apt to corrupt business."

Increasingly during the last hundred years national well-being has depended on the progress and dissemination of sound education. It is clear that a great part of the funds for this purpose must be supplied by the State, though public officials are not generally well fitted to control the methods of higher education: and in regard to them the State may be well advised to trust as far as possible to the guidance of the Royal Society and other bodies of advanced students, in association with the Universities. In regard to popular education it is to be remembered that drinking troughs are in vain supplied for horses, if their bearing-reins are kept so tight that they cannot reach the water. Therefore, if education in any broad meaning of the word is to become a reality, reasonable conditions of life are necessary².

¹ See the Memorandum of the Board of Trade on *State assistance to the dye industry* [Cd. 9194], 1918. Grants in aid may be made up to 40 per cent. of costs of (1) general plant and buildings, (2) laboratory buildings and equipment, and (3) laboratory maintenance for certain periods. In return restrictions are to be imposed as to prices that may be charged, and as to the profits that may be divided. Thus the great power which has been obtained by the combined firms of British Dyes and Messrs Levinstein seems (in the present state of the industry) almost an essential for rapid progress: and it is to be strongly controlled in the general interest.

² This is the main drift of the *Report of a Committee on Social Conditions in relation to Adult Education* [Cd. 9107], 1918. The Master of Balliol was in the chair.

APPENDIX A¹

A NOTE ON METHOD IN ECONOMIC STUDY

1. *The progress of science, while increasing the stock of knowledge, increases also the area of conscious ignorance. Relations between economic analysis and ethical aspirations.* APP. A, 1.

Absolute certainty is possible only in regard to (1) particular individual facts; and (2) deductions by strict reasoning from axiomatic premisses, such as those of pure mathematics. Even sciences, which deal with concrete facts and conditions as definite and immutable as those of physics appear to be, cannot claim certainty over the whole of their area. In biological sciences the area over which certainty extends is relatively very small; and in the social sciences it is less than in those which deal with the lower forms of life.

Even the physical sciences made but little progress in their youth; partly because they had no adequate apprehension of the vastness of the area, which lay beyond their knowledge. But by patience and perseverance each generation of workers has corrected, and brought certainty into, doctrines which had previously been faulty and uncertain; and at the same time it has opened out new ground in which uncertainties abound and certainties are rare: the certainties of physics increase in number, but its uncertainties increase much faster.

The experience of economics during the six or seven generations, in which it has been studied seriously, has been similar, though cast in a smaller mould. Adam Smith cleared up many obscurities and uncertainties: but the area of his

¹ See above, p. 7.

APP A, 1. conscious uncertainty was far greater than that of his predecessors. Ricardo's bias was towards making his ground certain, so far as he went, rather than towards broadening his outlook: and his vigorous narrow certainties had such sway that men rested on them, with the result that little truly constructive work was done for a long while; though in consequence of that very stagnation, the science appeared to increase in certainty. But the combined constructive efforts of students in the chief countries of the western world have made the area of economic certainties perhaps fully twice as large as it was in, say, 1860: and at the same time they have increased in even larger proportions the area of conscious economic uncertainties. Those matters as to which there is no longer uncertainty are but little discussed; while conflicts of opinion are prominent over the widening area of uncertainties. The quiet agreements do not attract the attention of hasty critics; the turmoil of conflicts does.

A chief cause of the great recent extension of the area of uncertainty in economic discussions is to be found in that growing volume of responsible doubt as to the general sufficiency of the existing social order for the requirements of man's nature, to which reference has already been made. In an age of violence prudent men strive rather to strengthen those elements of social order which are already the strongest, than to inquire whether it might not be possible, in more fortunate times, to improve them away, and substitute better elements in their place. The rigid outlines of the doctrines of Ricardo and the earlier Mill were partly caused by the temporary return of Europe, between 1790 and 1820, to a reign of violence: and John Stuart Mill was so much under their influence when young, that he laid down canons as to the province of the economist, which seemed to exclude the use of all faculties except the intellectual. But these rigid limits were unsuitable to the latent warmth of his nature: and, as he indicated on the title page of his *Principles of Political Economy*, he softened the hard outlines of economic science by an admixture of "social philosophy." This movement was carried further, at first chiefly under German influence: and it has now gone so far in England and America and other countries, that it may be regarded as cosmopolitan; social

studies of a general character are now largely mingled with others that are more strictly scientific¹.

To the scientific group belong retrospective statements in the indicative mood, as to the causes which have been (certainly or probably) operative in bringing about past events; and prospective statements, also in the indicative mood, as to the results which may be expected (certainly or probably) to follow from the action of specified causes. All opinion is liable to be tainted by unconscious bias; but that taint can be kept low in matters in which every serious student can equip himself with the knowledge and the implements for investigation and reasoning, that have been accumulated by the progressive labours of many generations of strong workers in the same field. And, though confusion may for a time be caused by the intrusion of partisan or interested disputants, yet patient study prevails progressively in all issues that are within its grasp.

On the other hand, expressions of sentiment or desire in the optative mood, as to the relative claims of different social aims, must necessarily rest in the main on the personal authority of individuals. For instance the social benefits, which would result from an increase in the supply of material comforts and luxuries, are of a different order from those which would result from improved health, increased leisure, better musical opportunities and so on: and when a difference of opinion arises as to the preference which people ought to show for any of these, the issue cannot be decided by scientific method.

Again, it may be suggested that, though the rigid rights of private property, which prevail under the present social order, may justly claim to have done a great and necessary work; yet human nature has now so far developed, that social benefit would result from some softening of these rights in such ways as would promote the more equal distribution of wealth. Now such a proposal offers scope for turning to account the stores of knowledge and scientific apparatus, that have been accumulated by economic science; and therefore there is a certain obvious

¹ Mill's term "philosophy" is perhaps not wholly appropriate. A better term appears to be "policy" (not current "politics"); which corresponds to the full title of the great German Association, commonly known as the *Social-Verein*; but of which the official title is *Verein für Social-Politik*.

APP. A, 2. convenience and appropriateness in its being discussed from the special point of view of the economist. But some of the questions involved in it, and especially those which relate to the development of human nature, have not yet been brought within the scope of scientific treatment, at all events by the methods of economics¹.

To conclude:—economic studies are not to be limited to matters, which are amenable to strictly scientific treatment. But those conclusions, whether in detail or in general, which are based on individual judgments as to the relative desirability of different social aims, or as to matters of fact which lie beyond the scope of any individual's special studies, should be clearly distinguished from those which claim to have been reached by scientific method.

2. *Similarity amid diversity of the methods of physical and social sciences. The need for elasticity in the uses of economic terms.*

A few words may be added as to the guidance which the experiences of the physical sciences suggest to their younger sisters, the social sciences.

The path to be followed was pioneered by the sciences of mechanics and astronomy and by other studies of inorganic matter; because they meet less obstacles to exact observation and reasoning than are encountered in a study of organic development. They discovered at a comparatively early stage that complex problems must be broken up into elementary parts; for there is indeed but little chance of finding a class of complex problems which resemble one another so closely that

¹ An illustration will perhaps make more clear the way in which exact but limited knowledge may be combined with broader estimates that rest on uncertain foundations. A navigator who has for some time been unable to take good observations, and is in waters where the currents are uncertain, must be content with probability: he can do no more than make sure that his conclusion as to the distance and direction which his ship has travelled since his last good observation contains no error that is not inherent in his guess at movements of the currents, or in the figures shown by his log; but he may not rest content with less. The function of economic analysis is to render a service within its sphere similar to, though less thorough than, that which the science of navigation renders within its sphere: the value of such services is seldom very much diminished by a little uncertainty as to some of the data.

the same sort of systematic reasoning can be applied to all of them, and thus each be made to throw light on the others. APP. A, 2.

But the opposite is true of the elementary parts into which complex problems can be broken up. Each such part of any one of them is likely to belong to the same class as a number of elementary parts of other complex problems; and by systematic study, general rules can often be discovered which apply, more or less nearly in the same way, to each member of the class. Similarities and dissimilarities between different members are fruitful of suggestions. Gradually a general rule appropriate to them is developed; and the rule becomes more definite and also more elastic, as the fundamental laws of Nature which underlie it are more distinctly apprehended. Meanwhile provisional conclusions in regard to various elementary parts of complex problems are brought together, and worked up into broader partial truths: and thus by the cumulative work of successive generations, intellectual machinery is built up which can work its way through even very refractory material. The most prominent change in method which has resulted from this experience is an increase in the stress which is set upon the study of *tendencies*; as distinguished from the comparison of the same or similar events under very different conditions or at widely different stages in their evolution.

It was not till the seventeenth century that the physical sciences appreciated the full importance of the fact that when several causes act together and mutually affect one another, then each cause produces two classes of effects; those which are direct, and those which result indirectly from the influences exerted by it on other causes: for indeed these direct and indirect effects are apt to become so intricately interwoven that they can by no means be disentangled. So far the results were negative: they seemed to indicate that the task of following out and understanding the combined action of several causes, which are in various degrees mutually interdependent, is beyond the power of human faculty. But a way out of the difficulty was found, chiefly under the guidance of Leibnitz and Newton. An epoch-making process of reasoning showed that, though the indirect effects might grow cumulatively, and ere long become considerable, yet at first they would be very small indeed

APP A, 2. relatively to the direct effects. Hence it was concluded that a study of the tendency to change, resulting from each several disturbing cause, might be made the starting point for a broad study of the influences of several causes acting together. This principle is the foundation of the victory of analytical methods in many fields of science. Its best known triumph is that of the Nautical Almanack which takes account of the disturbing influences exerted by any two planets on one another directly; and also indirectly as the result of their disturbances of other planets¹.

Social sciences have profited slowly at first, but with ever increasing rapidity, from such experiences of their elder sisters, the physical sciences. Facts are closely studied in well selected groups: tendencies which are observed as provisionally suggested by each of several similar groups, are first subjected to critical analysis, and then set up as provisionally established. But they remain ever on their trial. New experiences, apparently inconsistent with the old, may threaten their credit: but if a closer study shows that differences in conditions account for the differences in observed results, the credit is improved. Each such well established tendency is a real asset of knowledge: but it is seldom of much practical service, till its manner of working in combination with other tendencies has been studied. The task is long, but each of several generations has already contributed to its achievement: and now the number of those who work at economic science in Western Europe, the United States and some other new countries, is so great, that the progress made in a single decade can be clearly marked. The result is not to set up economic doctrines: they are left for

¹ This method is not easily grasped without the aid of mathematical symbols; but its central idea can be indicated vaguely without their aid. If *A* is a state of things influenced by conditions *B* and *C*; while *B* and *C* are so connected that a change in *B* sets up simultaneous tendencies to change in both *A* and *C*; then the changes produced in *A* and in *C* will at first be very small, though they may increase continually and cumulatively. Now since the immediate effect which a considerable change in *B* exerts on *C* would be very small; the immediate effect which the change *B* exerts on *A* indirectly through a very small change made by it in *C*, must be a very small part of a very small thing (in mathematical language it must be "a quantity of the second order of smalls") and be negligible provisionally. But yet its accumulated effects may need consideration in special cases, among which those considered by the Nautical Almanack hold a place.

political partisans, and elementary preceptors. It is to set up principles of record and analysis, so carefully applied that those who seek knowledge for its own sake, increasingly agree as to the general character of the tendencies to be expected from any set of conditions; and even, in some small measure, agree as to the course of action most appropriate to those conditions. There is however a special difficulty in social studies. No one can have first-hand knowledge of any considerable part of the conditions and other facts relevant to any issue. Therefore the first duty of every student is to be diffident: and his second is to shun controversy.

A business man is generally the best and often the only authority on those transactions for which he is directly responsible; but he must depend largely on second-hand information in regard to movements of production and trade in places and under circumstances remote from his own: and conclusions which are valid in regard to a single business, or even a single industrial group, are often not true in regard to larger units.

For instance, artificial restrictions on the number of workers, or on the output in any one skilled industry, influence the wages and profits immediately concerned in a different manner, and often in the opposite direction, to those of similar restrictions when applied generally. This fact is analogous to the fact that, though a shipwrecked man will increase his chance of reaching the shore, if he is able to rest one hand on the shoulder of another of the crew, yet the general adoption of this practice would greatly increase the chance that they would all be drowned.

Therefore an economic doctrine cannot be tested, as has frequently been suggested, by such questions as:—"Consider your own case: would the doctrine be true in regard to it?" The answer to that question may probably be in the negative; and yet the doctrine may be true in regard to the general case to which it claims to apply. If so, its practical importance will be increased by the fact that its truth would not be likely to be suggested by the ordinary experience of life, and could be grasped only by considerable observation and thought. In short, though direct practical experience of particular events is the basis of all economic knowledge, and is the exclusive source of

- APP A. 2. supply of the material used in the construction of economic science; yet by itself it reaches but a very little way towards the great task of deducing general guidance for the future from the instruction of the past.

Those studies, which are of little interest to any but experts, can escape ambiguity by the adoption of a great number of technical terms; each of which is defined sharply, and has no variations of meaning. But technical terms must be kept within very narrow limits in studies which relate to the affairs of the market-place: and unfortunately there are not enough terms in ordinary use in any language to enable each one of them to be allotted permanently in one particular sense with sharply defined boundaries. This difficulty is not very troublesome in ordinary conversation; where, as a rule, each one is concerned only to know that a word, which he uses, will be taken by his hearers in the sense intended. It is of little concern to him that elsewhere, and in other conditions, the same word may be commonly taken with rather different breadth or shade of meaning: for differences as to interpretation can be cleared up easily by question and answer. But the written word must carry with it all necessary explanation: and therefore a writer is bound to consider whether the particular use, which he is attaching to an important word in any inquiry, has been made clear by the context; and if not, to state explicitly what he means by it there. In another inquiry, he may desire to use it in a rather different signification, as is common in ordinary conversation: but, if so, he must be alert to indicate the change in the service to which he is putting the word. This is no doubt a counsel of perfection, to which few, if any, have attained. But the more nearly it is reached, the better will be the prospects of cooperative progress by men of affairs and by professional students in the discussion of matters of general interest, without the aid of an elaborate technical terminology¹.

¹ Bagehot, a master of literary form, and a leader in affairs, urged economists "to write more as we do in common life where the context is a sort of unexpressed interpretation clause"; and warned them against attempts to "express various meanings on complex things with a scanty vocabulary of fastened senses" (*Postulates of English Political Economy*, pp. 7, 8, 9): and an attempt is made here, as in my *Principles of Economics*, to conform to this precept.

APPENDIX B

SOME EARLY PHASES OF INDUSTRY AND TRADE¹

1. *Beginnings of specialized industry and long distance trade.* APP. B, 1.

The spirit of economic nationality has had many phases and many degrees in every phase. Sometimes it has been broad and genial; sometimes it has been intense and narrow. It has rarely been a universal good. But its evil results have seldom lasted long after their immediate cause has passed away; while its good results have borne fruit many fold.

In early times it was generally very narrow: because the whole range of man's moral vision was short; and even at a small distance other people appeared to him as strangers and aliens. The stranger or enemy—for one word often sufficed for both—could seldom reckon on more than the good faith and courtesy that belonged to the herald's tabard or the flag of truce. Except in this last respect, the instinctive habits of mutual aid among neighbours, and of common hostility to strangers, in the earlier stages of civilization seem not to have differed very widely from those which prevail among lower animals².

Within the family, or village, or clan there was little or no buying and selling, and not much even of formal and explicit barter: but the hard clear cut lines of that definite bargaining, which has so largely fashioned human life for good or for evil, came to the front when strangers sought strangers for the satisfaction of their own wants and the disposal of their own superfluities. Trade proper, and especially trade organized by a distinct class of traders and merchants, arose first out of the relations between groups of men, clans, or other rudimentary

¹ See above, p. 33. ² See Kropotkin's brilliant *Mutual Aid*.

APP. B, f. economic nations. It was international trade rather than domestic trade: Hermes was the God of money, trade and theft; of hospitalities and embassies.

Gradually there arose division of labour, and specialization of skill. It did not extend to nearly all industries. But it was occasionally carried a long way by sporadic groups of artisans, who gradually attained a subtle hereditary skill in choice metal or textile work: their light goods travelled far, with but little protection from physical force, though often under some sort of religious sanction. Thus trade at Delphi and Olympia was protected by the truce of religious festivals before the time of Zeus and Apollo; as was that of Mecca before the time of Mahomet. And wherever the sway of an organized church extended over a wider area than the sway of political rulers, commercial intercourse owed much to the religious security of fairs and pilgrimages, of national games and church festivals, of monasteries and sanctuaries¹.

For indeed, as Heeren seems to have been the first to show, the course of history has been largely shaped by the need of commerce in its earliest stages for easy land routes: because traffic by river has many limitations, and traffic by sea requires great resources. Traffic over moist land, or through jungles and forests, is difficult or impossible without expensive roads: and the earliest long trade routes were over the vast dry plains of Asia and Northern Africa. The desert generally afforded an easy path, wherever there was water enough to support life².

The cessation of agricultural work, as soon as the green of spring passed into the brown death of early summer, forced men to exert themselves to manufacture light and refined wares for

¹ The influence of war and brigandage in affecting fellowship and solidarity among traders, honest and dishonest, peaceful and warlike, has been often discussed. See e.g. the earlier chapters of Roscher's *Handel und Gewerbfleiss*, Walford's *Fairs past and present*, and Robertson Smith's brilliant article on "Mecca" in the tenth edition of the *Encyclopædia Britannica*.

² It gave some little scope to the Law of Squares in transport and trade, even on land. But the work was slow. A camel spends the whole of a favourable season in carrying eight chests of tea, about half a ton, in two journeys from Kalgan to Urga (600 miles), at a cost of about £6 (*Journey in Mongolia*, 1902, by C. W. Campbell, British Consul [Cd. 1874, pp. 8, 9]). A caravan carrying a hundred tons would be nearly a mile long; and a single modern fast ten thousand ton ship can do about as much carrying in a year in spite of some delays in ports, as two thousand such caravans.

sale, and to serve as carriers and merchants between neighbouring lands for those goods that would bear the expense. Caravans carried spices and flavours, of which a small quantity satisfies a strongly felt need. And, what was much more important, they carried the best products of the subtle hereditary skill, which had grown up here and there among the more advanced peoples. These products, slight as their bulk was, served as an educating influence wherever they went: they stimulated the mind in the same way as the aroma and splendour of the choice natural products which they accompanied did the senses. All routes, however long and difficult, were open to delicate and refined textile goods and embroideries, to trusty steel and well-wrought weapons; and to various forms of work even in common metals, which contained more poetry than metal¹.

Great highways were made chiefly for political and military purposes: they connected seats of provincial Governments, camps, and depots with one another, and with the central authority; or they ran out to frontiers liable to attack. But though they were seldom laid out with any great regard to the needs of commerce, they effected a good deal for it; and they are noteworthy as the first large embodiment of public resources. Strong rulers have generally been impatient of the trade particularism of the several groups of their subjects; they have tried to break it down, and to spread freedom of trade and intercourse among the various provinces under their rule. For

¹ The chief long distance trade of early times was that between Southern Europe and Western Asia; all of which was forced to go part of the way by land. But most of it made much the larger half of its journey by sea. For a long while the route by the Persian Gulf was the easiest and most secure; and its advantages contributed much to the trade of ancient Phoenicia and Greece. The foundation of Alexandria contributed to the supremacy of the Red Sea route; in which water carriage prevailed even more strongly. The Persian Gulf route was however partly revived in Venetian times; and the trade between Europe and the East remained very light in proportion to its value even after the Ocean route had come into use. Mr Chisholm's address to Section F of the British Association in 1907 gives a list of the cargo of a Portuguese ship coming from India about 1590 which consisted almost wholly of spices, precious stones and similar things; while the outward cargoes were also very light. So great were the risks and so heavy the duties of the Mesopotamian route, that the silver value of spices was 60 or 100 times as high in Venice as that which had been paid for them in India; though both silver and spices are exceptionally portable.

APP. II, 2. all artificial barriers within the limits of their own territory have hindered the growth of that political unity and strength, which has been their chief aim. But, as Heeren insisted, the very extension of empire often leads to an increase of local autonomy; the most despotic rulers have tolerated semi-independent kings, and even republics, within their rule. Partly for this reason, commerce has seldom been injured as much by revolutions which have substituted one dominant race for another at the centre of power, as by the anarchy which has followed the total decay of despotic power¹.

2. *Even small towns carried on a sort of international trade with other towns, and a sort of colonial trade with neighbouring country-folk. Town patriotism, and town selfishness. The City States.*

Sacred festivals, and the markets associated with them, received protection from religious sentiment and authority in very early times. A certain immunity was afforded to traders proceeding to them, before civil order had been established over large areas by organized central rule; and the *Pax Romana* established a wonderful viability in the lands bordering on the Mediterranean, and in some others. In every age each considerable, civilized nation has possessed many trade centres, connected with one another by more or less easy and frequent intercourse: and each centre had as a rule some sort of sense of collective interests, partly political, partly economic. But there appears to be no record either in early or mediaeval times of a warm and strong common sentiment holding together the industries and the trade of a large area: there was no national trade in the full sense of the word. The individual might have his share in the commercial and other relations between the village or small town in which he lived and its immediate

¹ For the early history of roads see Lardner's *Railway Economy* and Huber's *Entwicklung des modernen Verkehrs*. A river may consolidate military rule almost as well as a system of roads. And Schmoller suggests (*Grundriss der allgemeinen Volkswirtschaftslehre*, § 102) that the compactness and stability, which the Nile gave to Egypt, helped it to maintain a well organized system of finance, such as was characteristic of the City States. The Nile Delta was a luxuriant garden, interspersed with canals, almost an earlier Holland.

neighbourhood: but he had scarcely any interest in the affairs of the empire as a whole. APP B, 2

When a group of people in daily intercourse with one another had to earn their living under difficulties, and to rely on one another's aid in contending with those difficulties, a feeling of brotherhood almost invariably grew up. If the difficulties were partly of man's creation, and had in them any savour of injustice or oppression; then to contend with them was more than mere enterprise. It became a religion, and a source of inspiration; and by its aid the community was knit together in living bonds, which grew with its growth. But with the strength came germs of weakness. Exclusive rights and privileges rose in prominence over duties and fellow-services: the bonds, that held the community together, might still increase in strength, but they lost vitality and elasticity.

In order to secure its position the better against the stranger, the town would form, if allowed to do so, a "gild merchant," or special "department of town administration whose duty was to maintain and regulate the trade monopoly¹." From maintaining the monopoly for the town, the gildsmen soon got to maintaining it for themselves. The "simple merchant," not a member of the gild, was often put on the same footing as the stranger, and was estopped from trading as he wished. He might not buy some things at all, or he might not buy anything in order to resell it, nor till it was clear that the gildsmen did not care to have it. The Gild often bought from a common purse; and, if an individual gildsman bought anything from a stranger, he would often loyally fulfil the obligation to let the other gildsmen have a share in his bargain².

And the neighbouring country-folk fared as badly as did the colonies of a selfish mother country in later times. The craftsman was indeed willing to submit to a little loss when purchasing the goods of other crafts; provided he and they could agree on town regulations which secured a high priced, if limited, market for all their goods among the surrounding

¹ Gross, *Gild Merchant*, ch. III.

² The Dublin Gild of the Art of Merchants is an early instance of special racial aptitude for stringent regulation. Gross (*Gild Merchant*, ch. VIII).

APP. B, 2. country-folk: as Adam Smith observes, these often gave a greater share "of the annual produce of society...to the inhabitants of the town than would otherwise have fallen to them; and less to those of the country¹."

The town frequently made and enforced a rule that no grain should be sold away from the land except by the landsfolk themselves in the market-place. Sometimes no one might buy more than enough till every citizen had supplied his present need. Sometimes no buyer might overbid another. Sometimes the public authorities kept large stores or magazines of grain; and sometimes bakers were ordered to keep a good stock in hand. But gradually the trade in grain became so massive, that stronger forces than those of governmental authority were needed to deal with it. And one of the first manifestations of a spread of economic nationality over large areas was the granting of a more or less complete freedom of traffic in grain within the boundaries of a province or a whole country, but not beyond².

As Schmoller says:—"The omnipotence of the council ruled the economic life of the town, when in its prime, with scarcely any limit; it was supported in all its action by the most hard-hearted town selfishness and the keenest town patriotism—whether it were to crush a competing neighbour, or a competing suburb, or to levy heavier fetters on the country around, to encourage local trade or to stimulate local industries." And the trade of even neighbouring towns was "international" in some respects. For "a complicated system of differential tolls was everywhere devised by which some towns were favoured and others were put at a disadvantage, in each case either in return for corresponding concessions or in accordance with the varying hopes and fears to which trade gave rise." And Southampton made separate treaties with seventy other towns³.

¹ *Wealth of Nations*, Book I. ch. x. See also his discussion (Book III. ch. IV) as to "How the Commerce of the Towns contributed to the Improvement of the Country."

² The successive stages of this development, and their relations to the size and other conditions of the town populations to be served are well set forth in Schmoller's *Epochen der Getreidehandelsverfassung* in his *Jahrbuch* for 1896. A short similar study following geographical lines is given by Lexis in the *Handwörterbuch für Staatswissenschaften*, s.v. *Getreidehandel*.

³ See his *Essay on The Mercantile System* edited by Ashley, and Mrs Green's

But economic nationality could not reach its full development except in a city which, whether formally subject to a Suzerain or not, had practically full control of its own affairs. In such a city public spirit gradually acquired the largeness of view, and sometimes—not always—the stability of purpose, that befitted the large responsibilities of a powerful State. Inland towns often became rulers of provinces. Maritime towns sometimes acquired an imperial sway, being drawn to it almost unconsciously and without any other original purpose than that of securing their own trade against violence. On the seas their ships could seldom trust to any other protection than their own; and they were all equipped for fight. But when they had arrived safely at a foreign port, their difficulties had only begun. They still needed protection for themselves and their goods against the rude violence of the mob, and against the more orderly violence of its rulers.

For this purpose "Factories" or forts were established along the shore of the Mediterranean from the beginning of history; and they grew in importance and costliness as the effective area of the world's trade increased. And the empires acquired by several Italian cities, and especially by Venice, anticipated that, which an English joint stock company some centuries later developed on the basis of a few forts on the sea-coast of India.

Venice was Latin, and was never quite young. She soon came under the charm of Byzantine power and magnificence. Reversing the old Roman rule, she for some time confined to the aristocracy the rights of distant commerce; except in so far as she, like Marseilles and some other ports, kept them in her own hands. She built her own ships; but she often hired them out to private merchants, keeping however a controlling hand over many trades.

Gradually she got to love empire for its own sake: and,

Town life of the fifteenth century, vol. II. p. 53. Sometimes a charter would give a town "as much liberty as the citizens of London have" in certain trade matters. *Ib.* p. 51.

Even as late as 1575 the Mayor and Corporation of London forbade the bringing of Norwich wares into London without their being first taken to Blackwell Hall; there to be packed away, sold at stated times, and charged with heavy tolls. But such anarchic action could no longer be endured by the central government, and it was cancelled.

APP. B, 2. though she was never cruel without occasion; though she enforced her will with a comity that soothed and even attracted foreign customers, yet she was a stern ruler. She placed armed ships at the entrance of their rivers, for fear any foreign merchant should give them better terms than Venice would do: for indeed they had often to deal with Venice rather than Venetians. She was jealous of any competition; but she could cooperate heartily with those whose work supplemented hers; and the love between her and Cadore of the mountains, with her forests of pines ready to make the tallest and straightest of masts, was deep and strong.

She excluded the products of foreign skill and forbade her own artisans to emigrate; and at last she ceased even to learn. Her industries lived on the reputation and skill they had inherited from the days of freedom and growth. But the heat of the day continues to increase for some little time after the sun has begun its downward course: and the impetus which Venice had obtained from enterprise, fostered by freedom and only tempered by regulation, carried her onwards for a while, even after excessive regulation and the want of stimulating competition had begun to lower her vitality. Her fall was hastened by external events; especially the spread of the Ottoman empire and the diversion of the route to India from the Mediterranean to the Ocean. But List's verdict stands:—"If we inquire of history what were the causes of the downfall of the Republic of Venice and of its commerce, she replies that they principally consisted in the folly, neglect and cowardice of a worn-out aristocracy, and in the apathy of a people who had sunk into slavery." The further development of that verdict however contains the kernel of a doctrine about which controversy has raged increasingly during three generations.

List admits indeed that "...Unrestricted freedom of trade was beneficial to the Republic in the first years of her existence; for how otherwise could she have raised herself from a mere fishing village to a commercial power?" But he continues, "a protective policy was also beneficial to her when she had arrived at a certain stage of power and wealth, for by means of it she attained to manufacturing and commercial supremacy. Protection first became injurious to her when her manufacturing

and commercial power had reached that supremacy, because by it all competition with other nations became absolutely excluded, and thus indolence was encouraged. Therefore not the introduction of a protective policy, but perseverance in maintaining it after the reasons for its introduction had passed away, was really injurious to Venice¹." In fact however her supremacy never reached to that height. Therefore if indolence was encouraged by supremacy, it must surely have been encouraged also by her near approach to it: and the history of Venice would seem to lend some support to the opinion that external competition tends to stimulate and to maintain the resource and energy of a nation's industries.

Again, List does not deny that ruin came over Spain shortly after she had adopted the Venetian system of Protection, though he holds that "at the time of Charles V (first half of the sixteenth century) the Spaniards were more advanced than the English and French in every respect"; and he admits that Colbert's Protective regulations were followed by poverty. But he avoids the suggestion that the enfeeblement of competition tended quickly to quench the energy; which had been started by the sudden opening of profitable careers to manufacturing initiative².

3. *The industries of shipbuilding and trade were so developed by Holland, as partially to anticipate much that is characteristic of modern capitalistic predominance, and industrial technique. Industry and trade led up to finance.*

Sir W. Temple, writing of the early signs that the commercial supremacy of Holland would lead to that of larger nations, implicitly classes Holland with the Free States and Cities, and England with the greater nations. His survey may be quoted:—"Not many Ages past, Venice and Florence possessed all the trade of Europe; the last by their Manufactures; but the first by their Shipping: and the whole trade of Persia and the Indies, whose commodities were brought (those by land and these by the Arabian Sea) to Egypt, from whence they were fetched by the Venetian fleets, and

¹ *National System of Political Economy*, ch. I.

² *Ib.* chs. v, vi, xxvii.

APP. B, 3. dispersed into most of the parts of Europe: and in those times we find the whole Trade of England was driven by Venetians, Florentines, and Lombards. The Easterlings, who were the inhabitants of the Hanse Towns, as Dantzick, Lubeck, Hamburgh, and others upon that Coast, fell next into trade, and managed all that of these Northern parts for many years, and brought it first down to Bruges, and from thence to Antwerp. The first navigations of the Portuguese to the East Indies broke the greatness of the Venetian Trade, and drew it to Lisbon: and the revolt of the Netherlands, that of Antwerp to Holland. But in all this time, the other and greater nations of Europe concerned themselves little in it; their trade was war. The kingdoms and principalities were in the world like the noblemen and gentlemen in a country; the free states and cities, like the merchants and traders. These at first despised by the others; the others served and revered by them; till, by the various course of events in the world, some of these came to grow rich and powerful by industry and parsimony; and some of the others poor by war and by luxury: which made the traders begin to take upon them, and carry it like gentlemen; and the gentlemen begin to take a fancy of falling to trade¹."

Holland was large enough to serve as a basis for the largest trade that was then possible; and while not neglecting either agriculture or manufacture, she gave her main strength to the industry of commerce. At a time at which manufactures, however concentrated, could obtain only the minor economies of production on a large scale, she showed that its major economies were already within the grasp of concentrated commerce. She thus pioneered and prepared the way for England, who two centuries later was to develop the major economies of massive production in manufactures also: but in the earlier age the power of concentrated capital could

¹ *Observations upon the United Provinces, A.D. 1672, ch. VI.* Temple was a large-minded man; but the evil side of the statesmanship of that age is shown in the conclusion of his survey of the state of Europe in 1671 where he sums up evenly the merits of three courses open to England: (1) to preserve our present alliances and thereby the peace of Christendom or (2) to encourage France to an invasion of Holland or (3) to join with France upon the advantages they can offer us for the ruin of the Dutch.

make itself felt only by command of shipping and merchants' stocks. APP. B, 3.

By far the most important form of movable capital, until quite recent times, consisted of live stock, to which indeed the kindred origin of the words "capital" and "cattle" bears testimony: but agriculture offered little scope for the concentrated and highly organized employment of capital. Thus the opportunity for pioneering new and larger methods which lay in the hands of landowners was much less than that of the merchants, and especially of maritime merchants. For they generally owned their own ships; and, till well on in the eighteenth century, ships were much the most costly implements of industry in the world. Manufactures are commonly regarded as the industries which are most closely concerned with progress in mechanics. But in this and in every preceding century the ship has been the embodiment of more sustained thought and more organized experience than any other machine.

It was no accident that the origin of the vast modern system of joint stock undertakings can be traced to the necessity, which was felt even in the ancient world, for combining the resources of many people, in order to bear the expenses and distribute the risks of the shipping trade. But, though the ancient Romans made military roads at least as well as we can now, the arts of navigation are of relatively recent growth. In the early Middle Ages ships were small and heavily built, and they carried but little freight in proportion to their bulk. They were unable to progress at all except with a favourable wind: they did not venture out of sight of land in uncertain weather; and they carried but small cargoes.

But from the thirteenth century, when the compass came from the far East to the West, the arts and the appliances of navigation progressed fast. Ships became large and yet lighter of build and more easily handled: their net tonnage increased relatively to their gross tonnage, and even more relatively to the crews needed to work them. The art of tacking was discovered; and, as ships improved in structure, they were able to sail nearer to the wind and to dispense more and more with harbours and anchorages. Voyages went with larger freights and lower charges; with more security and less loss of

APP. B, 3 time, and therefore with less loss of capital: and there was of course a vast increase in the volume of trade and extent of trade: *i.e.* in the number of tons that were carried a mile; or, to speak more shortly, in the number of "ton miles."

But meanwhile the importance of the Mediterranean was being lowered by the spread of the Ottoman power, by the weakening of the police of trade, by the growth of piracy, and by the diversion of the traffic between Asia and Europe to the Cape route: and the more vigorous races of the North were gaining in knowledge, in wealth, and in opportunity. The scattered forces of the Hanseatic Federation could not however develop the latent economies of concentrated trade to their full extent; and, although Antwerp showed some signs of rivalling the trade of Venice, her career was cut short when the Scheldt was closed against her. No other single town was strong enough to fill her place: so the task fell to Holland, whose position and waterways combined every physical advantage for it, and whose people had every aptitude for it.

The Southern half of the low lands formed by the deltas of the Rhine and the Meuse was the earlier in economic development: the Dutch, like their pupils the English, were slow of invention¹. But the toughness of their fibre was unsurpassed. They possessed singular self-control: and they remained frugal and persistent for more generations than any other rich people had done before them. The sons and grandsons and great-grandsons of a wealthy merchant were seldom above work; and some special form of refined trade-knowledge was often the best part of their rich inheritance².

Holland seemed poor in physical resources: but her poverty was a part of her strength: for it led her to give her whole energies to developing those resources which she possessed. The chief of them lay in the fact that she contained in a small

¹ Huet, *Memoirs of the Dutch trade*, A.D. 1700, ch. I, tells how Bruges had the first great trade in herrings; and how even the art of fish curing, to which the Dutch owed the first great spring of their shipping industries, was borrowed from the South. Many years elapsed before they carried the lessons, which they had learnt from the Flemish textile industries, to a sufficient excellence for export trade.

² The evil arising from a lack of this steadfastness is well shown in Ehrenberg's study of the rise and decay of the brilliant Augsburg.

compass the mouths of great rivers which bring to a focus many APP. B, 3 courses of rich and easy trade. Amsterdam was popularly said to be built upon herring bones: for her wealth rose out of the earnings of fishermen who fished first for their own markets, and then for sale as fast-day food for other peoples. Thus her domestic industries paved the way for her export industry of the services of carriage to other countries: for, as Petty said, "The Labour of Seamen and Freight of ships is always of the nature of an exported commodity¹." And he and others maintained that Nature had been as kind in giving to the Dutch but a poor home on the land, as in giving them rich provinces of water by sea and river. If they could have grown corn and wood easily themselves, their early call to life on the waters would have been less distinct. But having little vent for their capital in agriculture, they kept it long in commerce; and their excellent system of banking and commercial credit made their rapidly growing wealth in a fluid form available for all uses. Thus the rate of interest was low with them. Their shipowners and merchants could always obtain the loan of capital on easy terms; and it was used freely to join their natural watercourses by canals, thus making much of their land into a greater Venice. They spread out their industry upon the waters, so that their several towns were in constant, close, and cheap communication with one another; and for heavy traffic as well as for light.

They could meet the needs and hit off the fancy of customers in each place with choice of things drawn from many sources. They could select from many markets the fittest and the most opportune for the sale of any particular ware. Further, they could buy quickly and sell quickly: and therefore with but little loss for spoilt goods relatively to the turn-over, and but little capital locked up in idleness—a consideration of great importance at an early stage of economic progress, when movable capital was scarce: the rates of interest and profit were still high even in Holland in comparison with those of the present age.

And, just as an organized post can deliver letters more cheaply than could be done by private messengers; so, by

¹ *Political Arithmetic*, p. 19.

APP. B, 3. sending out ships in quick succession on circular tours, they could deliver and fetch goods, and especially small parcels of goods, from and to a great number of ports very cheaply. The knowledge which they got of one class of customers or producers in one trade helped them to know of other customers and producers in that trade and in allied trades: in matters of this kind almost every piece of knowledge is on the way to others, as is almost every house on a postman's beat. And the economy of this unity and concentration was still further increased by the arrangement that each town should give special attention to some particular branch of trade; the detailed knowledge of which became the collective hereditary property of her merchants. Thus Holland's trade was the cooperative work of many units, each of which was organized cooperatively; though indeed jealousy among neighbours was not rare¹.

Turning the power of specialization that comes from effective unity in another direction, they adapted their vessels to particular tasks. Petty remarks that, as the cloth manufacture employs many classes of artisans, each trained for a special work, so Dutch commerce employs different classes of ships for precious or coarse freights, for long voyages, for coasting and for minor traffic, "for ports where they need never lie aground, for ports where they must jump upon the sand twice every twelve hours"; and so on. And a tract on "Trade and Commerce with the Hollanders," which used to be attributed to Raleigh, says that a Dutch ship of two hundred tons needs "but nine or ten mariners where we need thirty."

Nor did their high organization of energy end with their commerce. They anticipated, a little later than Venice had done, but much more thoroughly, the great nineteenth century principle of interchangeable parts in the manufacture of their ships. Dutch shipwrights could specialize themselves on

¹ Temple mentions as one of "the chief Advancers and Encouragers of trade in Holland, the custom of every town's affecting some particular commerce or staple, valuing itself thereupon, and so improving it to the greatest height: as Flushing by that of the West Indies; Middleburgh, of French wines; Terveer by the Scotch Staple; Dort by the English Staple and Rhenish wines; Rotterdam by the English and Scotch trade at large and by French wines; ... Friesland by the Greenland trade; and Amsterdam by that of the East Indies, Spain and the Straits." *Observations on the Trade of the United Netherlands*, 1672, ch. vi. See also Huet, *l.c.* ch. iii.

different classes of work so that one man shall be always and only employed in the manufacture of keels of one and the same dimensions; another of ribs, another of beams, another of rudders, and so on. They adhered to one pattern mainly for ships of one hundred tons, and again for ships of five hundred tons; and, carriage being easy, the different parts of a ship could be ordered from different makers and put together easily. By this means "the labour must be less, and consequently the prices must be less, though wages should continue as high as ever¹." APP. B, 3

Further, Holland led the way in banking and financial organization on a large scale, and, in this matter also, she handed on the torch from the City States of North and South Europe to England and other western countries. In early times financial enterprise drew its resources, and obtained its opportunities from trade rather than from industry. For industry offered few economies to production on a great scale; it belonged to artisan rather than to capitalist organizers: but trade, and especially long distance trade, when conducted with ability and good fortune, yielded high returns on relatively large investments. A chief field for the operations of financiers was always found in the demand for loans to needy rulers and other magnates. But, as industry grew, an ever larger field was provided by the growth of industrial cities; where the products of innumerable workshops yielded in the aggregate rich opportunities for financial enterprise: and those merchants, whose powers of insight and imagination fitted them for handling large commercial risks, rose quickly to be leaders of finance. Some of them tripped, fell, and disappeared: but the survivors built up a great edifice of high finance that lasted long. So it was in the great cities of Northern Italy:—Genoa, Milan, Florence and Venice: in Augsburg, Frankfurt, Hamburg and other Northern cities: and so it was above all in Holland, leading the way

¹ *Considerations on the East India Trade*, 1701, ch. XII. The discussion by the unknown author of this pamphlet, of the efficacy of labour as applied in the manufacture of cloth and watches, is one of his many claims for rank almost on a level with Adam Smith. He goes on to this discussion of Dutch shipbuilding as out-topping all other things "performed by the labour of man." For some similar facts relating to Venice see H. Brown, *Venetian Republic*, ch. XI.

APP. B, 3. in this also for England. Thus financial faculty was evoked by the large handling of material goods; and, as Professor Sombart's study of *The Jews and Modern Capitalism* has shown, the presence of an adequate material basis for finance attracted the faculty by which high gains might be reared on that basis.

He claims indeed that the rise of almost every important centre of financial activity can be traced to the advent of Jews; who generally came from afar, and not even from lands with similar customs, language or climate: and this accentuated their original tendency to regard as strangers those, who were not of their own race, and to be regarded by them with distrust. And he accumulates evidence that religious persecution moulded the international distribution of economic strength as much through the forced migrations of the Jews, as through the forced migrations of skilled artisans. Whether his position be fully established by further investigation or not, it seems certain that the superior mobility of financial ability and resource must be allowed credit for a larger share in governing the mobility of industry in the middle stages of its development, than has been generally given to it¹.

¹ He seems indeed to have underrated the difficulty of deciding which of two contemporary and allied movements exerted the greater influence in promoting the other. He shows convincingly that places which expelled the Jews became poor; and that places which attracted them became rich. But it is to be remembered that, if a town was falling in economic strength its merchants might probably regard the competition of Jewish rivals as a chief cause of its impoverishment and clamour for their expulsion; and thus accelerate a decline which had deeper causes. Again, the expelled Jews (whose knowledge of the economic conditions of various places was even more exceptional than that it is now) would be likely to move to those places which had high and large financial capabilities: and, of course, those places derived part of their strength from that very liberality of spirit of which their hospitality to the Jews was an evidence. The strong brains of the Jews fitted them for many tasks; they took good part in several industries and in colonization. No other race has maintained vigour of intellect and character during so many centuries. And Roscher, *Die Juden im Mittelalter, betrachtet vom Standpunkte der allgemeinen Handelspolitik*, 1875 (reprinted in his *Ansichten*), makes an instructive survey of the many "old" peoples, who have rendered similar services (during shorter periods indeed) for successive growths of new peoples.

4. *It is true that economic development passes generally through three stages, in the last of which manufacture predominates: but List's assumption that manufacture is necessarily superior to other industries seems to mistake accidentals for essentials.* APP. B, 4.

When this stage in the industrial evolution of the world had been almost perfected, a seer arose to tell its story with epic force. List was not altogether a kindly historian, especially as regards England. But his story was full of suggestion and dramatic interest. It told how the world passed from its mediaeval to its modern phase in economics, and to a large extent in politics, by the expansion of ideas, sentiments and methods of action, which had previously been unable to expand beyond the limits of towns. He showed how the "Mercantile" (or, as he preferred to call it, the "Industrial") system, by which the transition from economic mediaevalism to modernism had been effected, had had for its aim to carry over these ideas, sentiments and methods from the life of towns to that of whole nations; and thus to create "an agricultural-commercial-manufacturing state like a city which spreads itself over a whole kingdom, or a country district raised up to be a city." He was a broad-minded man, full of knowledge and insight; and economic history will for ever owe him a great debt. Many of his most important teachings are associated with his well-known doctrine that economic development in the past has generally shown three clearly marked stages. That doctrine, taken broadly, appears to be securely established; but its full interpretation presents several difficulties.

In List's first stage the people are not ready for the "higher" forms of industry; they buy manufactured goods with raw products, and are strengthened and educated by their purchases. In the second they are ready for the simpler forms of manufacturing industry: and, by resolutely practising these, they can educate themselves for more difficult work. If they do this, they reach the third stage in which manufacture predominates; and they have some share of industrial leadership.

On this basis he founded his great practical precept that in the first stage commercial intercourse with more advanced nations should be welcomed without stint, for the sake of its educative

APP. B, 4. influence; and because it supplies the machinery etc. needed for further advance: in the second stage the nascent manufacturing industries of the country should be fostered by import duties on things, which they are beginning to be able to make; and in the third stage Protection, having done its work, should disappear. It is well known that the wisdom of each clause of this precept has been questioned from several different points of view: and that there is no general agreement as to the point at which he designed to draw the line between the second and the third stage. But these matters, though important, are not to our immediate purpose. Our special concern now is with List's suggestion that the second stage of a country's industries is *higher* than the first, and the third *higher* than the second, in proportion as manufactures take an increasingly prominent place among them.

To begin with, Knies (1853) pointed out that List's account needed to be supplemented by the observation that the successive industrial stages of different nations show an increasing tendency to "synchronize": for backward nations can, by aid of modern developments of the means of intercourse, absorb advanced industrial ideas and methods with a rapidity that was impossible in the ages to which List had specially directed his attention. But when Knies wrote, the time had not yet come for discerning that the character and conditions of industrial leadership are liable to great modifications, in consequence of changes in the relative ranks of different sorts of industrial work.

In the middle of last century it was still reasonable to think of agriculture and mining as necessarily characteristic of the lower stages of industry, and of manufactures as completely possessed of the higher. But developments which had their roots in mechanical inventions of the eighteenth century, have grown at an ever increasing rate throughout the nineteenth. Semi-automatic machines have taken on themselves some of the responsibilities which used to weigh heavily on artisans in the larger staple manufactures; and they have lessened many others. Thus not a few of those manufactures which most impressed men's imaginations when List wrote, have now lost their right to be ranked among the higher industries; while

other economic activities, some connected with manufacture and some not, have risen to the high places thus vacated. These changes call for a halt in our general study of industrial evolution. It is no longer reasonable to assume, as a matter of course, that an increase in a country's manufactures must be welcomed more heartily than other developments of her economic activity. No doubt England's chief strength, when List wrote, lay in manufacture. But as we have just seen, Holland's chief strength always lay outside of it; and yet she pioneered some of those paths of thought and action, in which many of the chief triumphs of industry have been won, both before and after List's time. And, as we have seen, not all of those characteristics of manufacture, to which its importance is owing, are of high quality. The substitution of repetition work in massive standardized production, even though it be true to a thousandth part of an inch, is not an advance, from the human point of view, over skilled handicraft: it increases man's power over matter; but it may diminish his power over himself.

APP B, 4

APPENDIX C¹

ENGLAND'S EARLY INDUSTRY AND TRADE

APP. C, 1. 1. *Origins of the energies, which were ultimately turned to account in England's industry and trade.*

Even in the present age, when travelling is easy and safe, and strangers are hospitably received almost everywhere, those who seek their fortunes in a far country are generally sturdier, bolder, and more energetic than the comrades and relatives, whom they leave behind: and this rule was almost universal in the early ages of violence, when the sword, the spear, and the arrow were the only passports to new lands. England was peopled by successive hordes of immigrant warriors; and, whatever may be the rule in the modern age of machine guns, the bravest were the most likely to survive in the days of hand to hand conflict. Her people therefore had an exceptionally large share of the solid qualities by which men have won their chief victories in difficult industries.

The energy thus imported was sustained by their predilection for open air rural life. England's climate is moist and even sometimes melancholy: but it is almost free alike from oppressive heats and long continued frosts, when outdoor occupations are scanty and difficult: and the relatively rich growths of winter grass, which were offered in farm land and forest, enabled the people to indulge their liking for animal food in a degree which was rare in fairly well populated countries: roots and other crops for winter consumption were still unknown.

Conditions were favourable also to a good supply of strong cereal food, much of which was indeed taken in the form of

¹ This Appendix is associated with pp. 33—41.

a drink which was midway between mild ale and grain steeped in water. Also an exceptionally large part of the population lived sufficiently near to the open country to have opportunity for work on land, generally in their own occupation, so long at least as population was scarce: and the rule, that every artisan is an agriculturist at times, while every agriculturist does some rough work in or about the house, was even more general in England than in countries where life in cities and large villages was more in favour.

Another influence which food-supply exerted in early times on the vigour of the population, was seen when food had been made scarce by failures of harvest or by the ferocity of contending armies. Maitland's great dictum, that "Agrarian history becomes more catastrophic the further we trace it backwards," has been supported by investigations into the evil alliance between famines and disease. During severe famine, rotten poisonous food, both animal and vegetable, was eagerly devoured. Famine induced disease, and disease militated against the strenuous cultivation of the land: in fact famines and plagues worked more evil through the general weakness which followed them, than through the deaths which accompanied them. It seems however to be established that pestilence was seldom followed in England, as it was abroad, by ergotism, which caused an enduring lack of nervous as well as physical strength; and that this immunity was largely due to the generous food of Englishmen in ordinary times¹.

Lastly it is to be observed that England's position lent but little support to any pretension, which the king might advance, that a strong army was necessary to defend the country against invasion. Some of her kings were strong rulers, but their strength belonged to themselves rather than to their position: it did not often descend like an heirloom to weak successors.

¹ The process by which food-supply has been steadied in recent times will be discussed in Appendix I; when some further light will be thrown on Maitland's great dictum (*Domesday Book*, p. 345). He gives strong reasons for thinking that the amount of land needed to supply cereal food for a given population was much greater than has been generally supposed: he suggests that "no more than one third of the arable land was sown in any one year," and that it was necessary to "face the possibility of garnering but six bushels an acre...of which two must be retained for seed" (ib. pp. 438 and 517--9).

APP. C 1. No doubt the limitation of royal power was of interest to the nobles in the first instance, rather than to the common people: but indirectly it helped to maintain the sturdy independence, at all events of the middle classes—i.e. the smaller gentry and the well-to-do yeomen and craftsmen. And further the whole of the people gained something, amid their manifold distresses, from the outdoor exercises and sports, which it was the policy of the magnates to foster among their followers.

Norman rule established formal political unity throughout England: but while conquerors and conquered were becoming a single people, the very toughness of their character was causing obstinate local interests to grow up everywhere; partly indeed because commercial intercourse, except along the rivers and the sea-coast, was hindered by the lack of good roads. England long remained backward in this respect: for the great roads of early times were chiefly built for strategic purposes and by forced labour; and the English King had no great occasion for them, and no great power of making them. So this vital factor of national economic unity was neglected¹.

Thus England lacked concentration: her people always made use of the estuary of the Thames, of the marshy network of rivers of the East coast, and of the small harbours of the South coast. But they left nearly all the larger affairs of their own seas to Italians and to Easterlings. They received from foreigners high-class goods and services; and in return they gave crude wool and skins and minerals, which they had received from the bounty of Nature. The foreigners, who carried the trade, brought revenue to the king, but were not loved by his subjects. Further to increase his revenue, and to educate his people, he favoured the settlement of foreign artisans among them: they were not much better loved than the foreign traders, but this educative policy was truly constructive.

The royal power could protect foreign artisans in England fairly well: but it was not ready for the larger and costlier task of protecting English traders in distant lands. Some

¹ Rogers held that during the Middle Ages, though the local roads were bad, the old Roman roads were kept in good repair. But this is doubtful. See Denton, *England in the Fifteenth Century*, pp. 171—182; and Cunningham, *Growth of English Industry and Commerce*, II, § 130.

start indeed was made with the Company of the Staple, trading under direct royal authority. But the chief extensions of national trade were intrusted to private companies; who received more or less of a monopoly, direct or indirect, to recompense their private outlay on behalf of the order and security of trade, at first with England's near neighbours, and afterwards with all the four Continents. The privileged companies provided a fairly thorough substitute for a national trade policy; and they fostered the growing rush of the strong Norse blood into maritime adventures, which were ultimately to plant the English race firmly in a great number of the richest districts and the best ports of North America and Asia. APP. C, 1.

While English merchants were slowly feeling their way to liberating the trade of their country from dependence on foreign capital and enterprise, internal trade was in process of being developed in spite of the lack of adequate roads. As now-a-days good roads are the feeders of railways; so rough roads and packhorse tracks fed innumerable waterways, small and large. Only a small part of the total area of the country was very far removed from water that would carry a boat or shallow barge, and that small part of the country was thinly populated: nearly all considerable towns, and even important villages, monasteries etc. were situated near deep water¹.

Crude metals, and mill stones, and other heavy things, for which the demand was urgent, would go round almost any distance by water, in order to avoid a long land journey: and even at a relatively late date, the monstrous bulk of the crop of hops grown in the South-east of England came partly by water to the international Stourbridge Fair near Cambridge, whence they went by water in all directions. Wheat and other grains would seldom bear the expense of a long journey by land; though a few other rather bulky things, such as salt-fish, would on occasion force their way nearly everywhere².

Wool was the only thing of first commercial importance that

¹ Towns now remote from the coast are described as ports by the chroniclers; and such towns as York and Doncaster "exercised the right of sharing in wrecks at sea, as though they stood on the sea-board" (Denton, *l.c.* p. 183).

² An interesting contemporary map of Stourbridge Fair is reproduced by Selfridge, *The Romance of Commerce*.

APP. C, 1. went in every direction, taking no refusal: and the head-waters of nearly every stream that flowed to an Eastern port, however small, received from land-carriers wool that was on its way to the Continent. Thus it pioneered the way to highly organized internal transport, just as later on it was to pioneer the way to highly organized industry. Coarse woollen cloth shared with leather the chief services that portable commodities rendered to substantial comfort. Raw wool in the early time, and manufactured wool in a later time, were the principal means of bringing into the country imports of all things, and especially of the much coveted precious metals: and it was regarded, for various reasons, sound and unsound, as the main buttress of national power in early times; while its manufactures were a main embodiment of industrial prowess in the beginnings of England's industrial leadership. The prominent place which wool holds in English history is not a mere episode, interesting to the chronicler. It is the dominant outward manifestation of that deep-set firm resolve to concentrate energy on things which make for solid and enduring results, which is the chief foundation of the place that England has won for herself in the world.

It is perhaps a relatively small matter that weavers shared with bakers the position as leaders in the formation of craft-gilds. Bread and clothing were chief representatives of the domestic commodities. Bread could not stray beyond its local market: but division of labour in the woollen trade went early in union with production for general markets, and thus worked towards the development of a class of dealers as distinguished from the actual makers¹.

Towards the end of the twelfth century "two and a half stones of wool," says a writer in 1805, when the woollen manufacturers were still predominant over all others, "would purchase an ox, whereas a labourer will now earn the value of a stone of wool in a week. At that time it would require sixty days, so that poor sheep walks were as valuable as the best land²." During the following century England had become fairly prosperous, in spite of civil troubles; but her cloth seldom tempted

¹ Ashley, *Economic History*, I. p. 192.

² Whitaker, *History of Craven*, quoted by James, *History of the worsted manufacture in England*, 1857, p. 47.

a foreign buyer, and she exported raw produce only. Early in the fourteenth the strong hand of Edward III set on foot such large schools of skilled foreign artisans, that she began to be able to sell coarse stuffs abroad, though still dependent on importation for all fine stuffs. This was the turning point: but several more centuries passed before the best handling of her own wool was in her own workshops. APP. C, 2.

The foreign artisans thus imported, as well as those who in later times sought England as a refuge from persecution, were drawn from many parts of Europe; and each group tended to set up that particular sort of woollen or worsted fabric for which its own home was noted. There soon appeared an astonishing variety of manufacturing processes, each of which belonged to one or two localities: and thus the great fairs were—like modern Exhibitions—schools in which people learned that the habits and resources of their own villages, and even their own counties, represented but a small part of what went on in the world.

2. The desuetude of mediaeval institutions and habits of life and action; and the growth of a labouring population, detached from specific obligations and rights, prepared the way for conditions of which the present dominant relations between employer and employed are the result.

During the thirteenth century and the first half of the fourteenth, a certain impatience of the customary conditions of tenure and service had been spreading among the people¹. It would have prevailed ere long without any external aid; but in fact it received a mighty impetus from the destruction of a third part of the population by the Black Death in 1348—9. Such an event would have caused a great dislocation of social and economic relations at any time: but, coming when it did, its force was increased greatly in fact, and even more in appearance. For, just as the rise of prices about 1870 set the agricultural labourers on improving their position by migrating to the

¹ The great variety, complexity, ambiguity and changefulness of these conditions, and the narrow limitations of present knowledge with regard to them, have been set out by Matland and Professor Vinogradoff; see e.g. the summaries in *Domesday Book*, pp. 60—61; and *Villainage in England*, pp 220 and 312.

APP. C, 2. towns; so the feeling of power which the villeins derived from the new scarcity of labour set them to surrender their holdings and purchase licences to live within the walls of the city¹.

The immediate effect of the Black Death was of course to create a scarcity of labour relatively to land, and of both labour and produce relatively to the stock of money: that is to raise the price of produce, and therefore the money wages needed to yield the accustomed food etc. to labour, at the same time that it raised the amount of produce which it was worth the while of the superior holders of land to give for labour. But they could not realize the situation, or perhaps they refused to realize it: they endeavoured violently to force back labour to a position worse than that which it had held before the Black Death; and their shortsighted selfish cruelty accelerated that break up of the structure of society, which they were anxious to sustain. It was ordered that everyone, who could not show a satisfactory occupation in the country, and had not already found footing in an urban industry, should be compelled to work at the money wages which were "accustomed to be taken" in the neighbourhood in which he used to serve two years before the Black Death—a rule that could not be enforced strictly, but yet was a potent aid to oppression: and that in turn strengthened the spirit of revolt.

If a labourer migrated in search of other employment he was liable to be arrested, to be put in the stocks, and ultimately to be branded with a hot iron: and the enforcement of this rule

¹ R. E. Prothero, *English Farming*, ch. II. "The break up of the Manor"; and ch. III. "Farming for profit," sets out the whole position very clearly.

The disarrangement of social relations caused by the Black Death was so violent as to arrest general attention; just as when a great river in India or China changes its course, the destruction of all land marks, over which its torrents have swept on the way to their final bed, completely destroys for a time all traditional customs. New customary rights grow up in a few short generations, and in a few more they are thought to have descended from time immemorial: the great deluge remains as an epoch in the history of the learned, while the incessant minor calamities, which have made plasticity and mobility the only enduring features of custom, are but little considered. "Just before the outbreak of the Black Death, the wages of agricultural labour were exceptionally high:...the rise was due to earlier pestilence": and in the following century "twenty outbreaks of plague have been recorded" (Denton, pp. 218 and 105). In fact the Black Death "fell in the middle of a period of social convulsion, and only gave a more radical character to its later half" (Steffen, *Geschichte der englischen Lohnarbeiter*, p. 310).

was entirely in the hands of those in whose interests it was ordained. Such discipline tended to drive the rural labourers, now defiant with a nascent consciousness of power, away from agriculture. Authority, urged on by the landowners, decreed in vain that every boy and girl who had served up to the age of twelve at the plough or cart should abide ever at the same labour: and later on it added that no country man other than a freeholder of 20s. might apprentice his son to an industry. The latter rule was more easily enforced than the former; and, in consequence, the woollen and other industries sought rural districts where formal apprenticeships could be avoided. A little later the towns felt symptoms of decay, for which their own narrow regulations had prepared the way: and they had to petition for leave to draw apprentices from outside¹.

The reconstruction of social and economic order moved forward without any reversal, though not without some checks. The ebullitions of 1381 and 1450 (the Peasants' Revolt and Jack Cade's rebellion) indicated much, but effected little. Meanwhile however a steadily expanding freedom of thought was reinforcing freedom of action: the Lollards protested against the manner in which the monasteries discharged their stewardships for the poor; and their criticisms cut deep into the foundations of all authority that seemed in conflict with reason.

¹ This was nearly the last phase of the many changes which the Craft Guilds had undergone since they had superseded the earlier Merchant Guilds. It seems doubtful whether there ever was a time at which all those who assisted in the work of a craft had a reasonable prospect of attaining full membership; and it is known that great distinctions of wealth gradually showed themselves within a guild, and between guilds; and that members of "yeomen guilds," set up by journeymen, were of lower status than those of full craft guilds. The decay of many towns in the fifteenth and sixteenth centuries is attributable to the selfishness of the guilds, their inability to adapt themselves to changing conditions, and their general mismanagement. See Unwin, *Industrial organization in the sixteenth and seventeenth centuries*, Introduction and chs. I, II; Ashley, *l.c.* ch. II; Cunningham, *l.c.* pp. 236—353, 441—447; and 145—525; and Webb, *History of Trade Unionism*, ch. I, especially pp. 35—38; also the chapter on "the control of industry" in Salzmann's *English Industries of the Middle Ages*. There is some interest in a comparison of this history with that, which Dr Clapham shows (*Economic Journal*, June, 1910) to be the true explanation of the decay of the Norfolk worsted industry from about 1830. He proves that the lack of water power and that of cheap coal were by no means the only factors. A third commensurate with them was the violence and corruption which marked the resistance of the old highly-concentrated forces both of employers and employed to the technical changes demanded by the new era.

APP. C. 2. The extravagance, made fashionable by Edward IV, hastened the sale of landed properties to men, who regarded land as a source of revenue to the neglect of its amenities. The strong hand and parsimonious habits of Henry VII made for quiet steady work: but his frugality was rendered odious by the methods which his ministers adopted for filling his coffers. And the dashing extravagance of Henry VIII, being backed by an unprecedented accumulation of treasure, set going a display of wealth, which inevitably made for poverty; even though industry and trade were flourishing, and knowledge was being increased by leaps and bounds through the Revival of Learning.

Thus "rogues and vagabonds" did not wait for the Reformation and the dissolution of the monasteries, but plagued Henry VIII while he was still a faithful follower of the old religion. In Elizabeth's reign, the most skilful, thrifty and energetic artisans from many parts of the Continent crowded into England. Some of them brought a good deal of capital, or rather command over capital in the form of various documents which the age was getting to use freely. But even more important additions to the real wealth of the country were artisans, who could teach something that Englishmen did not know, and had good cause for wishing to know: one of these might easily be of more commercial value to the country than a draft on a foreign banker for money equivalent to several hundred pounds. And yet so grievous were the "growing pains" of the social body in transition, in spite of the vehement remedies prescribed by the unskilled political practitioners of the age, that vagabondage was still rampant; and all wages continued to fall, if we can trust the doubtful indications of statistical records¹.

¹ Steffen, *Geschichte der englischen Lohnarbeiter*, has analysed the history of wages in England, making careful use of the data compiled by Rogers and others; and his chief results, so far as relevant to our present purpose, may be summarized thus:—He takes as representatives the amounts of wheat that a carpenter's and an agricultural labourer's day's wages would severally buy; and he further shows that no great difference in the results (so far as the period under view is concerned) would have been made if the standard ration had been taken to consist of wheat and meat in proportions by weight of about five to one. Wages thus reckoned appear to have been rising considerably just before the Black Death: they made a great jump upwards in the next half century, in spite of a rapid increase in the population: they continued their

3. *Further preparation for modern relations between capital and the various orders of the industrial population. The constructive work of early trading monopolies.* APP. C, 3.

The total quantity of movable wealth required to sustain the new methods of industry was not very great: it attracted

upward movement during the fifteenth century, though at a slower rate, the growth of population being relatively slow; they fell generally during the sixteenth century, rising indeed a little during the early years of Elizabeth's reign, but falling rapidly towards its end; the increase of population meanwhile becoming a little more rapid. They seem to have reached their lowest point early in the seventeenth century (in the reign of James I); and thence to have risen slightly in the case of agricultural labour, but fast in the case of carpenter's labour, till the middle of the eighteenth century; beyond which we need not go at present.

But in all this there is a large element of conjecture. No near approach to accurate estimates in regard to the purchasing power of wages even in our own time is attainable: and of the numerous questions, which arise in regard to early entries relating to wages, only a very few can be answered even approximately. For instance the representative wages quoted above are necessarily those of men who work by the day; because the allowance in kind to those permanently employed varied much, and cannot be traced. The high wages during the fifteenth century, shown in Rogers' tables, have contributed to the erroneous notion that it was the golden age of English labour. But Denton (*l.c.* p. 214) seems to have established—though the matter is not wholly free from controversy—that the day labourers could not look for employment for more than three days on the average. They may indeed in some cases have occupied land on which they could use their free time; but the evidence on this matter, as well as in regard to the benefits which they could get from common land, is so vague as to be almost without statistical value. Modern experience of large common land in some parts of the Continent suggests that its chief benefit accrues practically to those who are well to do, and can supply some hay (or other fodder) to eke out the scanty winter growth.

Again the price of English wheat is governed now by that of imported wheat: and therefore it is generally low after a wet summer, in spite of modern facilities for curing damaged grain; but much of that wheat for which the labourer had then to pay the highest price after incessant rains, was such as would not be marketed at all to-day. We do not know how far this evil extended, nor do we know how much allowance must be made for the fact that the coins in common use were habitually clipped and sweated: the coin was counted out to the labourer; but it was generally weighed to the wholesale seller of grain. Again the silver, even in new coins, was always being lessened to the detriment of the working-man: it had been about halved in the four and a half centuries which followed the Norman Conquest; and Henry VIII and his children took quickly a third of what remained.

If the comparison between present and earlier times is carried further, account must be taken of the prices of meat and other things which were cheap then, but are relatively dear now: and allowance must be made for manufactured and oriental products and for a multitude of services and other things which were very dear or even inaccessible in early times.

APP. C, 3. attention chiefly because England had been so singularly ill provided with it during the Middle Ages. For then nearly every product that was adapted for the larger commerce came directly from the land, and belonged to men who had no inclination to use their resources for any other purpose than the promotion of their own pleasure, power and prestige. They were, however, perforce responsible for England's first capitalistic industry, that of mining; and, shortly after the monasteries had ceased to pioneer the intensive capitalistic cultivation of land, the landed gentry began to take up their task. The shipping industry was far more greedy of free capital than any other till quite recent times it absorbed a good part of the little that was to be had in the fourteenth and fifteenth centuries. Ere long the great merchants became the chief financiers of England, in an even more marked manner than they had of other countries; partly perhaps because Edward I had expelled the Jews, just when England's commerce was beginning to lead its own life.

When an able financier, whether Jew or Gentile, had once found a footing, his resources were likely to grow by leaps and bounds, so long as he and his heirs maintained their ability and their liking for financial pursuits; unless indeed their careers were cut short by violence, or powerful debtors repudiated some large debts. For the habitual rates of interest corresponded to the impatience and lack of arithmetical faculty of rich men and monarchs, who were not accustomed to be thwarted, and had no turn for accounts¹.

¹ It has been suggested that the sudden growth of great fortunes in early times is hard to be explained in view of the small amount of capital employed in industry and trade, except on the supposition that the ordinary rate of profits in business was extravagantly high. But perhaps insufficient account has been taken of the frugality of early merchants and financiers until they had become wealthy; and again of the marvels of rapid accumulation at a high rate of net profits. Suppose that merchants, father and son, conducted a business with such unbroken frugality, ability and good fortune as to net ten per cent. of annual profits, in excess of all their personal and domestic expenses, on the average in each of sixty years: their capital would then have been increased three hundred fold. And interest on loans has even greater marvels; because the hasty and sanguine borrower often accepts a loan for a short period, say three months, at say five per cent. This would accumulate at compound interest to three times its original value in six years if no payment were made meanwhile; and would be multiplied eighty fold in twenty-four years: at five per cent.

The situation was a little changed by great mortality among the nobility and higher gentry in the final struggles of the Roses. The Tudors and the Stuarts filled the vacancies in a great measure from the ranks of rich traders: thus we read that trade is not "practised by the nobility of the Kingdom as it is in other states from the father to the son throughout their generations...the son being left rich scorneth the profession of his father, conceiving more honour to be a gentleman¹." And again those who draw income from land are apt to "consider trade as no otherwise necessary in a nation than to support younger brothers, and are ready to thrust all public taxes upon trade that they may ease the land²." In all this the cultivation of the land gained a little; but industries and the common people lost much. There was however some compensation in the tardy growth of powerful companies for commercial and industrial enterprise: for these enabled rich men, who did not desire to take an active part in business, to supply it with some of their capital and draw good returns from it³.

The most prominent English trading company in the Middle Ages was not a Joint Stock Company but a *Regulated* Company: that of the Merchant Adventurers. It was in their support that Bacon wrote to James I: "Trading in companies is most agreeable to the English nature, which wanteth that same

a month, a rate at which some people borrow now, a debt of £1 would become £100 if allowed to accumulate for eight years. Few people reflect on such arithmetical results; but the professional lender has always known them.

¹ Mun, *Treasure of Trafficke* published in 1664 (but written a good deal earlier), p. 5 of McCulloch's edition.

² *Britannia Languens*, 1680, p. 3 of McCulloch's edition. The observations on "the new nobility" in Sombart's *Luxus und Kapitalismus*, pp. 10—24, contain much similar matter in regard to England and France.

³ Professor W. R. Scott has written the history of *Joint Stock Companies to 1720* with notable thoroughness. It may be observed that a few Joint Stock companies connected with the water supply, the draining of land, and fishing appeared rather early; and a few manufacturing companies in Scotland were founded between 1660 and 1690. But 1690 may be taken as the beginning of the modern Joint Stock era for most purposes. Rogers' study of *The first nine years of the Bank of England* has made clear the peculiar conditions of credit at the end of the seventeenth century: and the diagram, in which Prof. Scott (*l. c.* vol. III) sets out the daily variations in price from May to September 1720 for the South Sea Company, the East India Company and the Bank of England, makes a vivid presentation of marvellous events.

APP. C, 3. general view of a republic which runneth in the Dutch and serveth them instead of a company¹."

A Regulated company was an association of merchants, each of whom managed his business in his own fashion, subject to the general regulations of the company and to his payment of a certain contribution to a common purse. From this purse were paid the expenses of defence, of "factories" (i.e. fortified trading stations), ambassadors; and such other expenses as belonged to the trade as a whole, rather than to the business of any individual.

The Merchant Adventurers earned the gratitude of the country by the courage and ability with which they handled a great part of her trade with the Continent during several centuries: but, when the larger problems of trade with Asia and America called for bold expenditure, they were hampered by lack of coherence and by that tenuity of common purse, which were inherent in their constitution. They suffered, as all other institutions did, from the drowsiness of old age, from which there was no alert public criticism to awaken them. Regulated companies thus gradually yielded place to those on Joint Stock: they were in fact the product of transitional circumstances.

The general principle of Joint Stock association, especially in maritime enterprise, belongs to the Ancient World; and it has remained without great change to the present time. But the early English Joint Stock Trading Companies, like the Regulated, required and obtained exclusive privileges, in order to recompense them for their great outlays: and they became the chief guardians of the country's trade with other continents; until the time was ripe for Governments so to take over the care for security on land and sea, that even small men and small companies might trade at their ease. Their discharge of this trust was not without reproach. But their worst faults were not developed till the Mercantilist policy, of which they had

¹ Quoted by Craik *à propos* of the small part which trading by individuals played in English commerce even later, as seen e.g. in Roberts, *Map of Commerce*, 1638: but in fact even wealthy Holland instituted companies, whose common purse might defray the outlay needed by distant trade for defence and other common ends. Of course strong merchants may have exercised individuality as members of a Joint Stock, and still more as members of a Regulated Company.

been chief ornaments, sank into a corrupt and inept old age; as APP. C, 3. will be noted later on.

In short, such exclusive trading was in its origin "constructive"; since it enabled the great companies to perform such large work for the nation, as would in turn enable the nation as a whole to achieve yet larger work. The task set them called for courage and prudence, for large power of organization, and administrative skill. It called into activity qualities that are to be found only in great nations; it developed them, and made the nation greater.

It is true that the monopolies caused England's commerce to be divided up into distinct compartments; but the partitions gradually disappeared: and there was left a world trade so broad in its scope, so unified in its central relations, and so large in its volume, when judged by the standards of that age, that it would have made an epoch in history, even if it had not incidentally founded the British Empire.

Meanwhile there were other industries, much smaller in the aggregate than agriculture, and giving much less scope for large individual capitals than maritime trade, which were in some sense capitalistic even at an early stage. The miller, whether he used wind or water power, needed an expensive plant: his position helped him to mercantile transactions of considerable scope; and he did not always rise above the temptation to usurious dealings with producers of grain and consumers of flour. Reference has already been made to the early sinking of capital in the search for minerals. But, except for copper and other valuable ores, mines could not be carried far down; for there existed no adequate appliances for pumping out the water: and, therefore, though the English coal industry became important in the sixteenth century, it offered no special attractions to very large capitals. And in the seventeenth century several imported minor industries were set up on more or less capitalistic bases. But the evolution of capitalistic production is of course best seen in the textile industries, especially that of wool: for it was the basis of a great part of the movable wealth of the people¹.

¹ The introductory chapter of Levy's *Monopoly and Competition* gives some details as to alum, salt and glass. The fiduciary element, which exists in all large cooperative and joint stock undertakings, has been always latent in the

APP. C, 4.

4. *Work done in the household for the use of the household gave way to production, mainly in cottages and small workshops, of goods, the ultimate marketing of which was organized by professional traders.*

In the early Middle Ages, the food, clothing, houses and utensils were made almost exclusively of local materials by local labour. And—partly because English roads remained exceptionally bad till the middle of the eighteenth century,—this old rule held in regard to a large part of the consumption of the rural population, long after specialized industries with high technique had established themselves firmly in places that were in early touch with the greater world. According to the old rule “women spun and wove wool into coarse cloth, and hemp or nettles into linen; men tanned their own leather”: in the winter evenings nearly every man took a hand at making rough tools and household utensils, with the aid of the village smith for iron work; while “travelling carpenters, smiths and tinkers visited detached farm-houses and smaller villages at rare intervals¹.”

businesses of monasteries, among which for this purpose the colleges of Oxford and Cambridge may be reckoned.

The various causes which enabled joint stock companies to flourish in particular trades and industries, though generally only for short periods, are set out in Schmoller's *Geschichtliche Entwicklung des Unternehmens*. He shows how the difficulties of getting one set of people to confide their capitals to the permanent control of others, with whom they were not in contact, were evaded rather than overcome. For many companies were only family groups; some, as those of the Publicans, were also held together by common professional interests. Others were in effect short-lived associations for carrying out some task which involved greater capitalistic risks than were convenient, perhaps possible, to the individual. The permanent companies of modern times owe their strength in great part to moral qualities of recent growth.

¹ See R. E. Prothero, *English Farming*, p. 29, for details. Similar conditions of life and work may be observed to-day in Tyrolean villages. Even in summer, in the interval between hay and grain harvests, the advent of a shoemaker will collect all the members of a family who are not on the high “alps” to do the less skilled work of making into shoes for the family the leather, that has come from their own cattle and been cured in the village tan-pit.

In rural districts remnants of household industry were common up to the eighteenth century. Thus in 1727 Laurence, *Duty and Office of a House Steward*, says:—“Tis supposed that all materials are found, and laid at hand for the workmen, (except glazier's) which is much the best way, for workmen, sometimes are apt to impose, and use bad materials.” Quoted by Rogers, *History*, vii. 620.

Unwin, *Industrial organization in the sixteenth and seventeenth centuries*,

In this stage there was a good deal of work for wages; but for a long while most of it was performed as service due by serfs or by semi-free labour; or by free, but inferior, holders of land to their superiors. The greater part of it may be classed as *household industry*, because it was rendered in the *homes* (or other premises) of the consumers of the products. It is thus contrasted with *domestic industry* in that broad sense of the term in which it includes all the various arrangements under which things were made, either for sale or under contract, in the *homes of the producers*.

Domestic industry in this broad use of the term, began to get the upper hand of household industries, except in purely rural districts, about the thirteenth century: and its dominance was maintained till the eighteenth. In all its forms it offered scope for a single independent artisan; with or without assistance from his family: but for the greater part it made use of hired labour on a small scale; and therefore should not be contrasted, as it has been by some writers, with the wage system. It includes all handicraft, whether organized in Gilds or not; and it may be regarded as consisting of three broad classes; which, like nearly all other groups of adjacent economic classes, shade into one another by imperceptible degrees.

In the first class are those industries, which worked up local material to meet a steady local demand for goods of customary quality. The producer was thus in personal contact with those who supplied his requirements and those who bought his products: and he had scarcely any occasion for the services of capitalist traders. For his implements were inexpensive: he needed not to hold any great stock of materials or finished goods at any one time: and, though his outlook was narrow, it reached to all the persons and places with whom his business was directly concerned. All his work was within the range of *homely* associations and habits of mind.

The second class of domestic industries made staple products from familiar materials. Some of the materials had generally to be obtained from afar by aid of traders; and the greater part of the products had to be sold by aid of traders; that

pp. 53—4, suggests that the class of masters was largely developed in the latter part of the fourteenth and the earlier part of the fifteenth centuries.

APP. C, 4. is, by men who had larger resources and a wider connection, than belonged to homely producers. But yet the breadth and steadiness of these industries enabled homely producers, congregated in the same neighbourhood, to make almost automatically a market of their own to which traders steadily resorted to supply the materials and other things needed, and purchase the things ready for sale; and each producer carried the risks of his own share of the process of production, in the trust that, so long as the conditions of outside markets were favourable, traders would do his marketing for him, under the influence of mutual competition, on terms advantageous to him. Speaking generally this trust was justified by the event: though the exceptions fill a large and gloomy page in economic history¹.

The third class of domestic industries was that conducted by small master producers, who supplied factories or workshops with their plants, and were independent of external control in all matters of detail; but yet manufactured to the order of capitalist "undertakers," who bore all the risk of marketing, and often even supplied the material to be worked up. This arrangement has already been described (above, I, III, 5) as belonging to the third stage of domestic work.

To sum up the position:—when the material used was costly; and especially when the homely producer would have difficulty in getting the most appropriate sorts, and perhaps be tempted to mix in some inferior sorts; then the merchant, who contracted to buy the product, generally supplied the material, thus carrying his financial aid a good deal further.

¹ The two following pictures make a pair. The first is from a Devonshire account of 1630 (quoted by Cunningham, *l.c.* II. 499):—"The gentleman farmer or husbandman sends his wool to the market, which is bought either by the comber or the spinster, and they, the next week bring it thither again in yarn, which the weaver buys; and the market following brings it thither again in cloth, where it is sold either to the clothier (who sends it to London) or to the merchant who (after it has passed the fuller's mill and sometimes the dyer's vat) transports it." The second is a statement by Gaskell (*Artisans and Machinery*, 1836, p. 13) referring to the time when water power was beginning to be applied to spinning:—"The domestic manufacturers were scattered over the entire surface of the country. Themselves cultivators, and of simple habits and few wants, they seldom left their own homesteads. The yarn which they spun, and which was wanted by the weaver, was received or delivered, as the case might be, by agents who travelled for the wholesale houses: or depôts were established in particular neighbourhoods, to which they could apply at weekly periods."

One step further was taken, when the plant required was beginning to grow expensive; for then it also was supplied by the merchant. The cutlery and several other industries, which spend much labour on small products made of cheap metal, have always been among those in which the homely producer could supply his own material most easily and with the least risk to the merchant who bought his wares: but the needs of the smith for the water driven triphammer and of the grinder for the water driven wheel, started the plan under which a capitalist let out space and power in a large building to individual artisans and other homely producers; "homely" because their resources and outlook were narrow, though they no longer worked in their own homes, and were not literally "domestic" workers¹. And there were yet two other motives which sometimes induced the capitalist to collect a number of workers into a single large building, supply them with plant and material, and pay them either by wage or on small contracts. One was the advantage of keeping the whole of some valuable materials under his own eye, so as to secure that nothing was pilfered or badly handled: the other motive operated in the case of new industries, especially such as were imported from Italy or elsewhere, and needed the supervision of foreign skilled workers².

The transition from each of these phases to the next was seldom made at a bound: it went generally by many little steps; and these steps were not always on the same lines. Throughout all of them the production was, for the greater

¹ This plan is still in work, steam power taking the place of water power: but possibly the cheap supply of electricity in cottages as a source of power may send some of these homely producers back to their own homes; a matter which will appear later on to be of some social importance.

² Thus it has been observed that in Tudor times capitalism was especially appropriate to exotic trades.—"The planting of new trades was a capitalist undertaking, organized by moneyed men, who were prepared to wait some years for the full return on their outlay"; especially when, as often happened then, they obtained, gratis or for payment, a monopoly for a considerable time. And a similar tendency shewed itself in a rather different form from early in the eighteenth century; "any trade which had been constituted under the control of large employers in its older habitat, was likely to be introduced in the same form; and, as capital was an important factor in the transferring of a trade to a new area, there was a tendency for the industry, as transplanted, to conform to the capitalist type" Cunningham, *l.c.* pp. 78 and 518.

APP. C, 4. part, "domestic," in that broad use of the term, in which it implies merely that the making—as distinguished from the marketing—can be conveniently conducted in the house or out-buildings of a single independent worker or small master.

As has been indicated above (I, III, 5 and 6) the term "domestic industries" has been used by various authorities in narrow technical senses, which are inconsistent with one another: some for instance confining it to cases in which the small producer works up material belonging to traders, while others confine it to cases in which the material is his own: these ambiguities have suggested the use here of the term "homely producer" to include all those whose resources are so small and whose outlook is so narrow, that they cannot obtain good direct access to general markets¹.

¹ Prof. Bucher gives in the *H. W. der Staatswissenschaften, s.v. Gewerbe*, a careful analysis of five main groups. The first is what has been called above "household industry" (he calls it "*Hauswerk* or *Hausfleries*"); the second wage-work; the third handicraft ("*Handwerk* or *Preswerk*"); and the fourth "financed work" ("*Verlag* or *Hausindustrie*"); the fifth is factory industry. (*Verlag* is rendered by the translator of his *Industrial Evolution* as "commission work": but that term seems too narrow.)

The famous 1806 *Report on the Woollen Manufacture* (quoted by Ashley, *l.c.* II. pp. 252—3) classes the Yorkshire woollen system, in which the small masters bought their own wool and sold the cloth to merchants, as "Domestic." But Prof. Bucher and Held (whose *Zwei Bücher zur Sozialen Geschichte Englands*, 1881, exercised a great influence in England) class it as handicraft; and confine the term "domestic" to cases in which the merchant supplies the wool to the manufacturer. That was done in some cases in the West of England; and the 1806 *Report* regards this as akin to the Factory System, in contrast with the "Domestic." Hence it may be concluded that "Domestic" cannot be safely used as a technical term; though it may perhaps be used to include all work done in their own premises by small producers, who do not attempt to market their goods themselves. Dr Cunningham uses it broadly (*l.c.* II. 497), and shows cause against Prof. Schmoller's proposal to exclude guild industry from it.

The word "manufacturer" originally meant a man who makes with his own hands: but in the nineteenth century it meant a factory owner. Ure (*Philosophy of Manufactures*, 1861, p. 1) says that "manufacture is a word which has come to signify the reverse of its intrinsic meaning...the most perfect manufacture is that which dispenses entirely with manual labour." He however ignores all manufactures except the textile. See also Held, *l.c.* p. 549.

APPENDIX D

THE ENGLISH MERCANTILISTS AND ADAM SMITH

1. *Mercantilism differed from policies of earlier times, not so much in general tendency, as in the ability and energy with which it was enforced and in the largeness of its scope*¹. APP. D, 1.

The purpose of this Appendix is to develop suggestions made in the third chapter of Book I, especially at its end, to the effect that Mercantilist policy contained a few principles applicable to all stages of economic evolution; together with many that were appropriate to the stage in which it had its origin. It is here argued that the conduct of public affairs in England in the middle of the eighteenth century was bad, and that the potential virtues of Governmental intervention in business were overshadowed by its actual vices: but that Adam Smith's doctrine, carefully interpreted, supports its active intervention in many affairs in an age in which it has acquired the power and the will to govern the people wisely; and the people have acquired the power and the will to govern their Government with knowledge, discretion and restraint.

Adam Smith is less open than many other economists to the charge of formulating sharp, short statements as to things which appeared to be fixed and primary elements, but were really variable compounds. And yet he is perhaps more responsible than anyone else for the belief, which long prevailed, that Mercantilism was a definite, unified body of doctrine; and that it worked mischief by inventing diverse shackles which hampered the natural freedom of trade. We now know that it was not a body of definite doctrines which

¹ This Appendix is associated with I, III, 4.

APP. D, 1. arose suddenly, quickly overcame all minds, and after a time was wholly discarded: it was rather a tendency of thought and sentiment which had its roots in the far past; which never, even at the height of its power, completely dominated all minds, and which has not yet completely disappeared.

And that which was characteristic of Mercantile practice, as distinguished from the practice of still earlier times, was almost wholly to its credit. The narrowness and confusion of thought, by which it was marred, were not new: but the consistency, system, and energy with which it was pushed, and the largeness of the affairs with which it was concerned, brought these defects into prominence. So far as it differed from the corresponding practices of earlier times, it was seldom less liberal than they, and often more liberal.

Trade in the precious metals has attracted more attention than it merits: because human nature, and especially primitive human nature, has a deep-seated tendency to idolatry; that is to the cult of symbols in preference to that of the things which they symbolize: and money is the symbol of wealth. But more: the precious metals are the most durable and generally acceptable forms of wealth. A store of them serves as the "fly-wheel" to growing wealth generally. And money promotes the circulation of things towards those who can turn them to best account, and can thus increase wealth.

As Schmoller says:—"The limitation of the exportation of the currency and of the precious metals frequently occurs in the case of the towns as early as the thirteenth century. It was not because money payments or industry or trade suddenly played an altogether new rôle in the days of Cromwell and Colbert, that it occurred to people to guide the course of exportation and importation and colonial trade, and to subject them to governmental control. On the contrary, it was because just then, out of the earlier small communities great national communities had grown up, whose power and significance rested on their psychological and social concert, that they began to imitate, not merely what Charles V had done in Spain, but what all towns and territories of earlier times had done, from Tyre and Sidon, from Athens and Carthage onward; to carry over what Pisa and Genoa, Florence and Venice, and the

German Hanse Towns had done in their time to the broad basis of states and nations¹." APP D, 2.

Again, "Mercantilism and bureaucracy (*Cameralistik*) overrated the possibility of ordering and arranging anew everything by the State, by law and by the will of Princes: even morality and justice appeared to the first thinkers from Hobbes to Frederick the Great as products of State regulation. Institutions appeared to them to be everything, the free play of individuals to be but little...It is the business of the rulers to prevent there being too many producers or too few, to resist *Polypoly* and *Monopoly*²."

2. *The discovery of the New World altered the form rather than the substance of trade policy with regard to the precious metals.*

Large war-chests have been held by the great military nations Germany, France and Russia. Thus warlike rulers in old times used to put a stock of silver or gold on the same footing with a stock of bowstaves at one time, and of gunpowder at another: for instance the importation of various luxuries into England was ordered to be accompanied by certain quantities sometimes of bullion, and sometimes of bowstaves³. And when the new era of territorial expansion came together with the influx of larger stores of the precious metals, desires which had always been present became active and prominent. For during the Middle Ages the stock of gold and silver in Europe was dwindling, and any nation that could maintain its stock unimpaired was gaining ground relatively to its neighbours: but afterwards, when the West was procuring larger supplies than the East was taking away, any nation which had not rapidly increased its stock would have lost ground relatively to others. There is no fundamental difference between the defensive policy

¹ *Mercantile System*, pp. 10, 60, 61.

² Schmoller, *Grundriss der allgemeinen Volkswirtschaftslehre*, pp. 63 and 85. For early regulations of industry in England see Riley's *Memorials of London Life*; and Schanz, *Englische Handelspolitik*, iv. ii, especially pp. 478—480. The old regulations throw some light on the strategical side of the science of modern government, but not on its tactical side.

³ In 1397 an ounce of gold was substituted for the two marks of silver which the law of 1339 had ordered to be brought back for each sack of wool exported

APP. D, 2. of trying to keep the national stock of precious metals in the country from diminishing rapidly, before the discovery of the New World, and the offensive policy of trying to augment the stock afterwards. The influx of silver from the New World may have set a score of tongues talking about the trade in the precious metals, where only one had been talking before: but it did not narrow trade policy¹.

The Mercantilists knew that, "although treasure is said to be the sinews of war, yet this is so because it doth provide, unite and move the power of men victuals and munition, when and where the cause doth require. But if these things be wanting in due time, what then shall we do with our money²?"

Even Adam Smith admits that countries which have not many fine manufactured or other goods containing great value in small bulk, cannot well supply the sovereign with the means of maintaining an army abroad during a great war: "it is in such countries therefore that he generally endeavours to accumulate a treasure as the only resource against such emergencies." As Sir Dudley North said (1691), Stocks of money are no better

¹ There has been a tendency in England, though not apparently in Germany, to follow Prof. Ochenkowski (*England's wirtschaftliche Entwicklung*, pp. 10—11) in drawing a sharp contrast between the eager quest for the precious metals of the Mercantilists, and the "childlike" and "naive" contentment of their predecessors. In the Middle Ages, he says, "the end directly sought was the complete development of sound human faculties, which should be the basis of the economic well-being of the individual and at the same time the support of social order" (pp. 248—9; compare also pp. 256—261). No doubt much authority can be found for this in the phrases of canonical writers, of royal ordinances, and of gild statutes. But it is to men's conduct, and not to their phrases on set occasions, that we must look for a true knowledge of their habits of thought: this holds as to all phases of life, and to none more than to the mediaeval.

² Mun, *Treasure by Foreign Trade*, ch. xviii. *Britannia Languens*, 1680, maintained that while "anciently the event of war" turned on "personal strength and roughness," wars had come to be "managed by much Treasure and little Fighting, and therefore with little hazard to the richer nation": and Defoe a little later said, "'tis the longest purse that conquers now, not the longest sword." The doctrines "money is the sinew of war," and "he who has iron can take gold," have supplemented one another since early times. Machiavelli in the Italian turmoil of iron and gold (and silver) at the beginning of the sixteenth century, maintained that gold will not always buy good soldiers, but that good soldiers will always conquer gold: but, as his friend Guicciardini says, this is practically false, though true theoretically. In fact it is easier to buy soldiers with money, than to get money by soldiers. See Ehrenberg, *Zustalt der Fugger*, I. p. 7.

than stocks of logs, only that "Money is much better for transportation¹." APP. D, 3

The Mercantile policy of maintaining a favourable balance of trade in the precious metals was from the first more liberal than that "balance of bargain" system which some meddling rulers had previously tried to enforce; for that ordained that each single venture of each single merchant should bring back at least as much gold and silver as he took out². The later and specially English developments of Mercantilism rose above the notion that the trade with any one foreign country was to be condemned on the ground that that trade showed on the balance an export of the precious metals: bullion sent to India, as Mun argues, brought back to England goods which could be sold on the Continent at such high prices, that even a small part of them could bring back more bullion than was sent out for the whole of them.

When a Mercantilist policy prohibited, or taxed, or otherwise narrowed the purchasing of certain classes of things from foreigners, it might have claimed to resemble the shutter which is drawn partly across a fire, with the effect of lessening for the time its total supply of air; but which by concentrating the remainder on some burning coals hurries their dull red heat into a white glow, which spreads through the furnace and ultimately evokes a greater heat and a larger feed of air than if there had been no restriction. Mercantile writers often seem to go close to this modern doctrine, but yet they miss it³.

¹ *Wealth of Nations*, iv, 1, and p 17 of McCulloch's edition of North's Essay. Hume, whose opinions on money were very enlightened, argued to the same effect. And the American colonists justified their adoption of paper and other fancy currencies in the eighteenth century, on the ground that having but few portable commodities that were in much demand abroad, and being compelled to buy even their ruder manufactures from England, they were in constant danger of being denuded of their gold and silver coin.

² Described with fine humour by Richard Jones, whose great services to English economics have been insufficiently recognized.

³ Thus Halea' *Discourse of the Commonwealth*, 1549, argues that foreign paper should be taxed up to a price which would enable it to be made in England; because "they do not best provide for his grace's profit that procure only a present commodity, but rather that commodity that may long endure without the grief of his subjects." But his explanation is disappointing. He does not state or imply that the country has latent natural advantages for the industry, which would enable it to thrive unaided if once it could outgrow its infant difficulties; for indeed the industry had already had a trial. His reason is that

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17. D, 2.

Mun's intelligence was no doubt sharpened by his zeal for the interests of the East India trade. And later on the intelligence of Tory writers was sharpened in the same way. For France sold much to us, and bought little from us; and France supported the Stuarts and opposed the Dutch. So at the end of the seventeenth and beginning of the eighteenth centuries the Tories were inclined to make little of our adverse balance with any particular country; while the Whigs wrote with nearly equal ability, but less insight, on the other side. They ignored Mun's doctrine; and argued:—"We purchase great part of our linen from Hamburg, Germany, and Holland, for which we pay them in manufactures: the rest we make ourselves; and if the value of £600,000 in linen should be imported from France, must not so many of our people be deprived of their employment¹?" They took no account of the fact that French goods could be paid for indirectly by means of England's exports to other countries.

Political bias then, as always, had a great power of enabling people to see just those parts of economic truth which fitted in with their policy, and to remain honestly blind to those which did not. But yet the economic wrestling of the politicians of the eighteenth century did good service. They overhauled trade statistics, searched out their inaccuracies and misleading suggestions; and, as the eighteenth century passed on, their successors continued the work and laid the foundation on which inductive studies of the course of international trade have been built up².

"it were better for us to pay more to our own people for those wares, than less to strangers: for how little gain so-ever goes over, it is to us clear. But how much so-ever the gains be that go from one of us to another, it is all saved within the Realm" (ff. 38, 38 b). Thus gold and silver are regarded as the ultimate gains of work.

¹ *The British Merchant* (vol. I. p. 304 of second edition).—a celebrated collection of papers edited by Charles King, and collected and published in 1721. The general Maxims of Trade, with which the collection opens, are good instances of a sophistical use of half truths, which is not infrequent even now. For instance: "The exportation of manufactures is in the highest degree beneficial to a nation." And "the importation of such goods as hinder the consumption of our own...necessarily tends to the ruin of multitudes of people."

² A brilliant and entertaining sketch of "Tory Free Trade 1673—1713" is given in Ashley's *Surveys*. Compare also Cunningham's *Growth of English Industry and Commerce*, vol. II. § 220. Davenant gives the impression of having

3. *The decline of the monopolist trading companies. The misuse of industrial monopolies.* APP. D, 3.

The expenses of trade with distant Continents were too heavy for the small common purses of Regulated Trading Companies: and trade with England's neighbours gradually ceased to need any special organization for defence. Therefore in the seventeenth and eighteenth centuries, the chief controversies in regard to monopolies related to those of the great Joint Stock Trading Companies. Fortrey (1673) says of them: "The whole commodity being in their hands, they will make the most that can be made of it, none having the like commodities to undersell them. And the like advantage they have again in what they buy; whereby in truth our own commodities are sold the dearer to strangers, and foreign commodities bought much the cheaper: when both would happen contrary in a free trade, where each will undersell the other to vent most, and also purchase at any rates to prevent the risk." They had a strong organization, unity of purpose, a rich purse and a long life; and they could afford to invest much capital and effort in building up a political and commercial fabric, which would give good return at a distant date. Fortrey says that it is urged that such companies "keeping the trade to themselves only, will have what commodities are to be vented abroad at their own price, whereby the workmen are many times discouraged and sometimes undone. And on the contrary what commodities are brought home in exchange they sell at what unreasonable rates they please, the whole commodity remaining in their hands; whereby the people in general are very much damnified, and the companies only enriched." And yet though it is "something difficult to determine," he concludes that "the prejudice that may happen by them to the workmen or home chapmen...is fully recompensed by the clear profit they return to the public of which they are members as well as others":—a characteristically hazardous conclusion from arguments which appear to be fair representatives of his time¹.

half perceived certain truths at one time; and, at another, of having fallen back into old errors. as indeed Adam Smith himself did.

¹ *England's Interest and Improvement*, pp. 34—5 of McCulloch's edition. It is notable that the Merchant Adventurers though only a Regulated Company were accused of "stunting" the trade in cloth; and denied that they would or

APP. D, 3. The companies adopted elaborate checks and counter checks, the expense and the delay of which caused their trade to be not very profitable to themselves, even when they were stinting at both ends: that is when they were both offering to the home producer a poor vent for his goods, and making foreign goods artificially scarce to the nation. They were compelled to go much by rule, and rules framed at a distance were often inappropriate to a sudden emergency or changed conditions: their instructions were prevented from doing frequent harm only by the continually recurring clause that the agents must after all use their own discretion. In spite of their being often well supplied with capital, they had not those resources derived from division of labour, and that aid of subsidiary industries which a free commerce finds in a large centre of trade.

Again there were complaints that the agents looked after their private interests; and as years went on, the Dutch and English East India Companies suffered much from the private trading of their own agents. At first the English Company had often made very high profits: its voyages in 1607 yielded profits of 234 per cent. But towards the end of its career, when suffering much from the vigorous competition of free traders and the faults of its own servants, it only gained £850,000 yearly from its trade in tea; though it charged the English people £1,500,000 more for the tea than they would have paid for it in Hamburg or New York if allowed to purchase it there¹.

could do so. But their Secretary Wheeler in 1601, can give no better evidence of this than the special pleading that "any matter of setting price was never once mentioned in any Court of Assembly of the said Company.... Every one studies to keep his feat (sic) and trade as secret to himself as he can, for fear of his fellow, lest being copied it might be taken from him." Macpherson, *Annals*, II. pp. 499—502.

¹ *The first letter book of the East India Company, 1600—1619*, edited by Sir George Burdwood, is full of prohibitions against private trading by its factors, which were often defied. Complaint is made (p. 317) that "The private trade of our factors has been carefully carried for their own lucre with the great neglect of ours, converting all the rich and precious things to their own use, and nothing for the Company but pepper and gross commodities."

The Company took no mean view of the probable profits of the trade. It bargained in 1610 to fit out and finance a ship for the use of two Dutch merchants with the proviso, that if the net profits per cent. are under a hundred, they shall receive no "factorage": but they are to have six per cent. if the net profit is two hundred per cent.: rising gradually till "if four hundred be made net profit upon the hundred, as £60,000 for £12,000, then they are to have 10 per cent." (*ib.* pp. 365—6).

The histories of some privileged companies might be written—"Charter, prosperous trade, keen competition, encroachments, decline, debt, difficulties, disappearance¹." But there were exceptions. Thus the Hudson's Bay Company was governed by a succession of able men, few in number, resolute and moderate, who looked far ahead, undertook expenses that were beyond the reach of "the particular," and fell not very far short of the ideal which had been pictured by their advocates. And there long remained much to be said for a strong company that could hold its own in war and diplomacy with the highly developed States of Asia: and there was much force in the plea, that while the trade to the West Indies could take care of itself, the trade to the "East Indies" (that is to the Pacific generally) was not ready to stand alone even at the beginning of the nineteenth century².

Adam Smith held that the resources at the command of the public for controlling the directors of Joint Stock companies, *at the time at which he wrote* (1775), gave no good reason for thinking that the directors would exert themselves sufficiently to succeed (without an exclusive privilege) in businesses, other than those "of which all the operations could be reduced to such a uniformity of method as admits of little or no variation." He had an advantage over the present generation in his personal

¹ Cawston and Keane, *The early chartered companies*, p. 85.

² Macpherson's *History of European Commerce*, 1812 (pp. 315—410), contains a detailed and forcible answer to Adam Smith's attacks on the East India Company. The Company lost its monopoly of trade to India in 1813; but it retained that to China till 1833; when it ceased to trade altogether. It discharged purely political functions till 1858; and then it ceased to exist, after the full strength of the nation had been needed to grapple with the difficulties that had grown up under its management—vigorous and upright as that had unquestionably been.

The Dutch East India Company was much better managed than the Dutch West India Company. The Dutch Greenland trade increased fifteen fold on being released from the dominion of an exclusive company, to the great delight of De la Court, the real author of the book commonly known as De Witt's *Political Maxims*.

Powerful attacks on monopolies are made in (Decker's?) *The Causes of the decline of foreign trade*, 1744, and in Tucker's *Treatise on trade*, 1750. Much is said in Lecky's *History of England in the Eighteenth Century*, of the share which the East India Company had in the direct corruption of politics; and of the injurious influence exerted on the tone of society by the crude extravagance of East and West Indian Nabobs.

APP. D, 3. knowledge of the class of men who were directors in his time, and the way in which they did their work. He was therefore on strong ground when he suggested that a director, whose holding in the stock of a company was but a small part of the whole, might be inclined to pretermitt a task that would increase his work, and add perhaps £1000 to the income of the company; but that he might probably have risen to the occasion, if his holding had been so large a part of the whole that a very considerable share of the £1000 would have accrued to himself. And it is to be remembered that the tone of morality, to say nothing of public spirit, was very low in England at the time; perhaps lower than even in the time of Charles II¹.

It has long been known that some of the evidence on which Adam Smith relied against the companies was biased. Professor Scott has developed this objection; and shown instructively that the companies sought for the greater part undertakings, which at the time were new in kind, and needed resource. This was of course partly because undertakings, which required larger capitals than were easily to be got under a single hand, had to wait for the joint stock movement to become strong before they could be begun. And further Joint Stock companies, though often fraudulent from the beginning, are seldom started by men lacking in initiative. The intrusion of routine into businesses, for which routine is inappropriate, comes at a late stage: and it is doubtful whether there was in Adam

¹ This seems to be Adam Smith's meaning. But Prof. Scott, *l.c.* i. 452, holds that he makes the mistake of "regarding the aggregate holding of the management in relation to the total capital of the company as the measure of efficiency." (This point has been noted above, p. 313 fn.) Prof. Scott has made important contributions to our knowledge by accounts of many Joint Stock companies which succeeded, although engaged in new and hazardous enterprises. In ancient as well as recent times it has been generally recognized that a chief function of joint stock association was to divide risks, of which few or no individuals have been able and willing to bear the whole. But many of the more frail joint stock undertakings of that time were not registered: and, if they failed, their memory seldom survived their decease very long. The strong companies, who survived, are at the service of the historian of our own time; while the others are not: and it seems probable that the misadventures of companies which were known to Adam Smith, and other responsible writers in the eighteenth century, justified his conclusions in great measure. The scope of his work prevented him from making explicit use of more than a very small fraction of the facts by which his opinions had been fashioned.

Smith's time a single very old company in existence which had escaped such an intrusion. APP. D, 3.

There is moreover great force in Prof. Scott's argument that the companies gained by associating men of different aptitudes in a common enterprise, and combining "the specific and detailed knowledge of the trader with the broad outlook of the man of affairs." And of course they enabled much capital, that would otherwise have lain idle, to bring forth good fruit; though in this matter there is a danger, which cannot be examined here, of a confusion between leaving money idle and leaving capital idle. The two things are closely akin from the point of view of the individual, but not from that of the whole community.

The whole position seems to be well put in the *Considerations on the East India Trade*, published in 1701, when the South Sea Bubble was not yet in sight. It says, that "in the time of Sir Thomas Gresham, wonderful things are storeyed...For every hundred pounds at the end of the year, besides principal returned again, two or three hundred pounds are said to have been divided between the customs of the King and the merchants gain." The writer adds that in his time the stock in trade (largely in the hands of companies) was a hundred fold as great as then; and, though the rate of profits was but a tenth as great, the aggregate contribution to wealth was ten times as great as then.

Though the monopolies granted to the great trading companies were originally part of a constructive, rather than a restrictive policy; yet no similar defence can be maintained on behalf of the great majority of industrial monopolies. A very few of them were granted on the plan of modern patents, to encourage and reward those who had devoted trouble and expense to victory over some difficulty in manufacture; and they were constructive in tendency. But such invention was of the rarest occurrence in England during the time when monopolies were granted most freely: in fact most of them were given to favourites, or sold for sums not comparable in value to the injury inflicted on the people¹.

¹ As Hume shows (*History of England*, ch. XLIV and Appendix to it)

APP. D, 3. Restrictive regulations, which have an indirect constructive result in promoting national power and dignity, are rightly judged with exceptional favour. But this fine feeling is not without its perils; for it is apt to be turned to account by persons who stand to gain by the restrictions. Such persons are most dangerous when they are honestly convinced, as they often are, that they are striving for the public good as well as their own. Among the monopolies which did most to maintain sectional jealousies and to delay the growth of national unity were those granted to particular towns to enable them to put down inconvenient rivals¹.

The Navigation Laws, though of most doubtful wisdom when regarded from the point of view of peace, had strong claims in view of the need for maritime defence. The exclusive or preferential privileges, which they gave to all English ships, could be defended on similar grounds to those that were granted to a particular company on condition that it provided for its own protection. The most famous of them were directed by England against the Dutch in the middle of the seventeenth century.

As is well known, Adam Smith held that they had contributed to national defence at no very great cost; and had been therefore wise, though "not favourable to commerce, or to that opulence which can arise from it." There is no sufficient evidence that the increase of England's naval power, which came about the same time, was largely due to them. But it

Elizabeth was one of the most wantonly mischievous traders in Monopolies. It is characteristic of her that when Lee brought to her notice an epoch-making invention for knitting stockings by a machine—almost the only invention of any considerable genius and practical force which is known to have been made by an Englishman before the eighteenth century—she said, "I have too much regard for my poor people who obtain their bread by knitting." So he took his invention to France. The practical problem to be solved was not easy: but Elizabeth's solution was clearly a wrong one. See also Levy, *Economic Liberalism*, ch. III. It is shown by W. H. Price, *English Patents of Monopoly*, that, though the few patents which were given to real inventions, were generally granted with honest purpose, they did not yield the same good results as such patents do now.

¹ As e.g. to Bridport for rope making, to Worcestershire towns for woollen cloths, to York for coverlets, etc. In some cases plausible reasons were suggested: and indeed the Tudors were masters of the fine art of writing preambles.

is to be remembered that merchant ships were still convertible into ships of war, and merchant crews into fighting crews, at a moment's notice; and that Englishmen endorsed Bacon's dictum:—"The dominion of the sea is an epitome of monarchy...The treasures of both Indies seem but an accessory to the dominion of the seas¹."

4. *England's colonial policy in the eighteenth century.*

Though the opening up of the mines of the New World did not alter the keynote of trade policy as regards the precious metals, it undoubtedly made that policy more prominent. Many bold spirits crossed the ocean for the love of adventure: but there was no touch of that desire for more elbow room, and for the escape of a growing population from the pressure of the law of Diminishing Return, which prompted the cities of ancient Greece to send out colonies, and which has grown up recently in Western Europe.

On the contrary, the most ardent advocates of colonial expansion across the oceans were foremost in their eulogies of the force that Holland and the City States had derived from their compactness, and made light of those which Spain and France derived from their large lands. They set themselves to prove that the colonies either, as in the case of Virginia and Barbados, attracted "loose vagrant people,...such as could never have lived at home to do service to their country"; or as in the case of New England were mainly a refuge for "the sort of people called Puritans," of whom many, "wearied with church censures and persecutions," sought a refuge in Germany and

¹ *Advancement of Learning* (1605), VIII. Evelyn takes as the motto of *Navigations and Commerce*, 1674, a doctrine, supposed by Cicero to have been learnt by Pompey from Themistocles: *Quis mare teneat, eum necesse est rerum potiri.*

Full accounts of early English Navigation Laws are given by Macpherson, and Craik. See also Schanz, *Englische Handelspolitik*, II. II; and an article on "Schiffart" by Lexis in Conrad's *Handwörterbuch*.

During a part of the eighteenth century the chief benefit of the laws went to New England shipbuilders; and helped to build up a naval power which was for a time stronger in proportion to its size than any other. Child's partial anticipation of List's notion, that navigation laws, which would be useless to the Dutch, were necessary for England, is maintained boldly in spite of some awkward facts (*Discourse on Trade*, 1688, ch. IV). A vehement attack on them is made in Section IV of *Britannia Languens*, 1680.

APP D, 4. Holland; and, "had there not been a New England found for some of them, Germany and Holland had probably received the rest: but Old England, to be sure, had lost them all¹."

The Mercantilists were not the first to claim the right of Sole, or Exclusive Markets for the mother country in the trade of her colonies. For the right is an old one, inherited by the mediaeval from the ancient world: the Romans, for instance, could not as a rule purchase products of the colonies of Carthage, except through Carthage. But while Englishmen at home were becoming ever more impatient of the shackles imposed on their trade by the selfishness and inertness of privileged companies, the monopoly of the colonial trade by the mother country was exciting at least as much discontent among Englishmen beyond the seas. They were beginning to put forward the claim either to remain as part of the nation in all senses and share in its rule, or to be allowed full economic independence.

The rule of the Sole Market was not applied quite rigidly. Certain exceptions were made as to the markets in which the colonists might buy and sell; but on the other hand numerous rules were made, prohibiting them from making things or carrying things for themselves, which the mother country preferred to make for them or to carry in her own ships. The story of these various devices is not without interest. For almost every one of them some plausible excuse could be made; and in partial recompense for almost every hardship inflicted on the colony, there was some sort of set-off in the shape of a special privilege granted to the colony in its trade with the mother country. Of course the threads of naval and commercial policy were intertwined; and one reason for favouring trade with a country's own colonies was that the sailors engaged in it were likely to retain a strong spirit of patriotism, and could be enlisted in the Navy at need.

¹ Child, *Discourse of Trade*, chapter x. pp. 137—8 of 1751 edition. Adam Smith did not fall into the error, which became prominent in the nineteenth century, of supposing that mere increase of territory must needs be an economic gain. But his mistake in supposing that the thirst for gold and silver was the almost exclusive motive for exploring the New World was specially inexcusable as regards England; as is shown by Roscher (*Geschichte der Englischen Volkswirtschaftslehre*, ch. II) on the authority of Hakluyt's *Collection of Voyages*:—a collection so full of marvellous geographical discoveries that this planet cannot afford material for another like it.

England was on the whole more generous to her colonies APP D, 4. than was any other country. They did indeed complain justly that "negro slaves were the only considerable object of foreign commerce, which England does not compel to be first landed on her shores" before it may be imported into the colonies: and that rigorous rules were made with the avowed purpose of crushing in the bud colonial industries which, had they once got a fair start, might have entered into effective rivalry with the English. But it was open to England to threaten that if the colonists were unreasonable "the Government would be forced, contrary to their practice, to do what other nations do of choice; viz. place standing forces among them to keep them in order and oblige them to raise money to pay them¹."

It is true that England could boast to her colonists that the money proposed to be raised for them by taxation was to be spent not for English purposes, but exclusively for the protection and defence of the colonies². And yet it is also true that Englishmen at home were to have the monopoly of those manufacturing industries without which no modern country can be in the first rank of civilization; and which Mercantile exaggeration treated as the essential conditions of political power and of intellectual progress. This selfishness, perhaps, did more to lower the moral character of Englishmen than to retard the higher development of the colonies: for the colonists found unexpected ways of using their minds. But in England's treatment of Ireland it was carried to its logical extreme and "sapped the industrial instincts of the people³."

¹ Gee, *Trade and Navigation*, ed. of 1750, p. 78 (first ed. 1730). He is willing to "encourage them in the raising of silk, hemp, flax, iron" (we were then largely dependent on foreign supplies of iron on account of the lack of charcoal to smelt it), "potash etc, by giving them competent bounties in the beginning, and sending over judicious and skilful persons at the public charge to assist and instruct them in the most proper methods of management"; and he is opposed to "the heat that some people have shown (without reason) for destroying the iron works in the Plantations and pulling down all their forges, taking away in a violent manner their estates and properties, preventing the husbandmen from getting their ploughshares, carts, and other utensils mended": and so on. He would allow them to have their own hemp, flax, etc. worked up by licensed weavers for their own use. But if they want any of it worked up for sale, even to their neighbours, that must be done at home; and similarly as to iron. Of course all such policy pressed more heavily on the Northern colonies, than on those which could raise sugar, tobacco, etc.

² Lecky, *England in the Eighteenth Century*, ed. 1. vol. III. pp. 313, 323.

³ This is the keynote of Sir H. Plunkett's striking *Ireland in the New*

APP. D, 4.

Adam Smith's criticism of the Mercantilist Colonial System of the various countries of Western Europe and his picture of the general relations between the Old World and the New are of fascinating interest even now: though perhaps his lights are a little too high and his shadows a little too deep. In particular he was certainly wrong, as Ricardo pointed out in his masterly chapter on the Colonial Trade, in supposing that the mother country could get no benefit by compelling a colony to deal exclusively with her. It is important to bear in mind that the Colonial system was abolished before Ricardo's exposure of his error was generally accepted. It was abolished not because it *could* not conceivably confer any gain on the mother country, but because it *did* not.

England's difficulties with her colonies came to a sudden head partly because, though she was liberal, they were specially inclined to resent interference; and partly for the paradoxical reason that she was becoming able to hold her own on the seas against all comers. Walpole, with masterly inactivity, had shut his eyes to the enterprise of smugglers; and thus prevented the monopolies from irritating the American Colonies. But the defeat of the French removed from the colonies all fear of being left to defend themselves against a powerful enemy: the narrow quasi-Mercantile love of authority induced a pedantic King and his ministers to override the wise tolerance of Chatham; and the bond of union was quickly snapped.

The successful rebellion of American Colonists, and the great increase in the trade between England and America which came after the change of flag, brought home to the minds of the mass of the people the force of much that Adam Smith had spoken to deaf ears a short time before. But they had not realized then, and perhaps men do not realize even yet, the grandeur and the moral strength of Adam Smith's large Imperialism, when he proposed that England's chief Colony should become the kernel of a great empire, in which she herself should

Century. He continues, p. 13: "When the legislative restrictions upon industry had been removed, the Irish, not being trained in industrial habits, were unable to adapt themselves to the altered conditions produced by the Industrial Revolution, as did the people in England. And as for commerce, the restrictions which had as little moral sanction as the penal laws, and which invested smuggling with a halo of patriotism, had prevented the development of commercial morality, without which there can be no commercial success."

play a leading, but not a dominating part. So the Mercantile element was gradually extruded from the relations between England and her colonies¹. APP. D, 4.

But there was nothing to take its place: perhaps there was no room for a consistent policy. The chaos which followed may even have possibly been the best thing under the circumstances. For the economic and political conditions of the colonies, and the means of communication between them and the mother country changed so rapidly, that any complete system adapted to one generation might have caused friction in the next. And indeed the problems of colonial policy in the seventeenth and eighteenth centuries, had but little real resemblance to those of the twentieth. Interferences with liberty of trade, which once were thought reasonable, would not now be tolerated by any "Dominion"; though they might be endured by such a settlement as that of Algeria, in which the bulk of the inhabitants are not of white race. Dominions take the position of younger sisters, rather than that of daughters. Further, by aid of the telegraph, many things can now be talked out, which could not bear the delays of a postal return service lasting several months; and which were then most advantageously treated by the almost autocratic ruling of a kindly mother country.

Again, the only markets for loans at that time were local or at best national. The international loan market belongs to a later stage, and is indeed largely the product of the electric telegraph and international civil law. The people of the mother

¹ Dean Tucker, in 1774, boldly proposed to give the colonists freedom, and to "guarantee it against all foreign invaders whatever": and two of his arguments for that course, coming as they do from a mind of the finest quality, show how very recent is the growth of our present sentiments of economic nationality. It is urged, he says, "that if we separate from the colonies we shall lose their trade. But why so? The colonies we know by experience will trade with any people, even with their bitterest enemies, during the hottest of a war, and a war undertaken at their own earnest request and for their own sakes." (*Four tracts*, pp. 195—6.) He is proud of that "bold, free Constitution, which is the prerogative and boast of us all" that set them for independence "the moment in which Canada came into the possession of the English, and...they had nothing to fear from a foreign enemy" (pp 153—4). But business is business. He would like to regulate them out of opportunities for developing rival industries; the law, making it "a capital offence to inveigle artisans and mechanics to leave the kingdom,...is unhappily superseded so far as the colonies are concerned: and a disjunction from the northern colonies would effectually put a stop to our present emigrations" (p. 206).

APP. D, 5. country were always ready to send out capital to their own branch houses in the colony; or to lend it direct to colonists with whose personal character they were acquainted. For in case of default they could appeal to courts where their own law was administered under the ultimate control of their own courts of appeal: but very few people would take the risk of lending to a colony of any other country than their own. An agreement for almost exclusive trade in goods with the mother country might therefore cause the colony a little direct loss; and yet be on the whole to her interest, because it multiplied and strengthened the threads by which she held on to the capital market of the mother country. And even now the exceptional ease with which loans of all kinds can be raised in the mother country is an important asset to a young colony.

5. *Some broad conclusions as to English Mercantile legislation and administration.*

There is no general economic principle which supports the notion that industry will necessarily flourish best, or that life will be the happiest and healthiest, when each man is allowed to manage his own concerns as he thinks best. No considerable thinker has ever denied that *if* the rulers of a people are immeasurably superior to their subjects in knowledge and insight, there are many directions in which the people may be forced against their will for their good: and such conditions undoubtedly did exist under the Norman and Angevin Kings. But the gap in intelligence and resource between rulers and the great body of the ruled had been narrowed by habits of independent action that had been evoked when money payments took the place of services, more or less regulated by custom, in regard to all varieties of tenure: and again by the failure of the regulations by craft gild and town authority to accommodate themselves to the changing methods of industry: and again by the partial movement of industries into the country: and again by the partial re-aggregation of industries in large villages or towns, not always of ancient date: as well as by the Lollard movement, and other precursors of the Reformation.

Mercantilist statesmen might have been expected to see

that the change in the structure of industry, which was already established, must inevitably go further: they might have made provision for further growth, and devoted careful thought to guiding it. But as a rule they seem to have adopted the more easy course of crude prohibitions and restraints. They prohibited changes of occupation, especially by agricultural labourers; and again the ownership of more than two looms by anyone in a rural district, and again the intervention of a middleman for the sale of goods which the resistless march of specialized industry was producing for general consumption. Also their Act of Settlement (1662), "the most false, mischievous and pernicious system that ever barbarism devised... disenabled the poor from settling where they please¹"; and their prohibition of all new cottages with less than four acres, was a crude careless act, because it was not accompanied by any provision of such land. They seem often to have sought the easier path out of a difficulty, in preference to that which would have worked the most good in the long run; and in particular to have lent too ready an ear to the representations of vocal, organized groups of producers and traders. They seldom ranged themselves on the side of movements which, though still weak, were yet destined to render great services to the country. They regulated wages, using sympathetic phrases, but in fact siding in the main with the employer against the workman, and especially the farm labourer².

¹ Arthur Young, *Political Arithmetic*, 1774, pp. 90, 4.

² Thus the famous Statute of Artificers, 1562, which continued substantially unchanged, though not generally enforced, proposed to adjust wages to the rising prices of provisions. No doubt it benefited some operatives. But its penalties against paying wages higher than those ordained were more conspicuous than those against paying less. It lowered more rates than it raised. It left money wages lower relatively to the price of provisions than they had been: and their relative fall continued fast after it had been enacted. Money wages indeed rose only 50 per cent. while prices rose 150 per cent. during the sixteenth century (see Rogers' *Work and Wages*, ch. XII, especially p. 349, Unwin, L.C. p. 120, but also p. 143, tending slightly in the opposite direction, and compare the figures quoted from Steffen above, p. 708 fn.).

Hewins, *English trade and finance*, p. 113, holds that the Statute of Artificers "gave the working classes into the hands of landlords and employers": though an amendment passed in the first year of the reign of James I "forbad Justices of the Peace, who were clothiers, to fix the wages of weavers." But no such protection was thought necessary for the agricultural labourer: he was left entirely in the hands of men who had an interest in buying his labour cheap.

APP. D, 5.

Mercantilism in its later phases was often almost consciously obsolete; and, partly for that reason, weak and corrupt. And there is a certain satisfaction in turning back to Tudor times, when its policy had not yet fallen under suspicion. The upright, incorruptible, capable Burghley is commonly taken as a typical representative of English Mercantilism in its best days; and its strength and weakness is well illustrated by the resolute despotism with which he enforced his own irresolute opinions. He was by nature neither a Catholic nor a Protestant. He half inclined to Elizabeth before Mary's succession to the throne was nearly certain. Then as a jealous Catholic he became intimate with Pole: but before Mary's death he was intriguing with Elizabeth. Finally he based his policy on the principle that the "State would never be in safety where there was a toleration of two religions." The Achilles' heel of Mercantilism lay in the eagerness with which its leaders enforced conclusions, which they themselves had adopted without any strong sense of intellectual responsibility¹.

It is manifest that the term Mercantilism is not altogether a satisfactory description of the economic characteristics of that period intermediate between the Middle Ages and the modern age; which may be taken to have begun with American Independence, the French Revolution and a number of concurrent mechanical inventions. List's suggestion, that Industrialism

This evil effect of the Statute lingered on well into the eighteenth century. Thus Vanderlint (*Money answers all things*, 1734, p. 148) says: "At length, as is notoriously known, the dearness of labour hath been found so burdensome to our farmers that the gentry and Justices of the Peace, in their open quarter sessions, have lately in several places attempted to redress this evil by regulating the servants' wages." This confidence of landowners in their own equity explains a good deal of English economic history. It is probably true that no other class has possessed for so long so unrestrained a power over the fortunes of others and has abused that power so little; but yet they have abused it grievously.

Fortunately well-to-do artisans were often able to do better for themselves than the Justices did for them. Thus in 1771, the wages of London tailors had been settled at 2s. 6d.: but "many master tailors gave some of their men 3s. a day"; they paid the 15s. at the end of the week openly, and then put 3s. more for a man "in some place where he knows where to find it: and if this money is not laid for him on the Saturday night, the master may be certain not to see his face on the Monday morning"; quoted by Galton, *The tailoring trade*, p. xlv.

¹ Professor Pollard, s.v. "Burghley" in the *Encyclopædia Britannica*.

would be a better name, points to the fact that Mercantilism--
 for we must continue to use the name—had two sides, one con-
 cerned with the regulation of trade and the other with the
 regulation of the industrial and social order of the population
 at large. On both sides, the commercial and the social, its
 general tendency was to relax and soften restrictions and other
 regulations of earlier times; but yet to give to such of them, as
 were retained, more power and cogency: for they were supported
 by the whole force of centralized Government, which became in
 each successive century, though not in each successive genera-
 tion, stronger and more fully imbued with the spirit of economic
 nationality.

APP. D, 6.

During her centuries of apprenticeship England developed
 her own version of Mercantilism. It was English in that it
 stood in a middle position between the versions adopted by
 the great countries, and those adopted by most of the City
 States, and by Holland. For it was more under the influence
 of merchants and of the people generally than in the Latin
 countries; and it was more under the influence of kings,
 statesmen and landowners, with no special trading experiences,
 than in the City States and in Holland.

In the latter half of the eighteenth century England had
 outgrown the stage at which Mercantile regulations were
 capable of doing much good; and those of them, which had not
 been repealed or fallen into disuse, were almost without ex-
 ception working harm and causing irritation. For they were
 old and detailed; and old details are nearly always inappropriate.
 And they were used as bulwarks for monopolistic privileges,
 which, whatever their original merits, were sure to be turned
 to ill account by those who had inherited wealth from energetic
 ancestors; and who for that very reason had less energy than
 the average trader, and had more care to defend vested interests
 than to overcome new difficulties.

6. *Colbert's genius gave a great impetus to French industries. But his Mercantile policy, crystallized in the hands of weak successors, was an important contributory cause of the cult of "Natural" freedom, which occupied the minds of the French people a little later.*

APP. D, 6.

We must now turn aside to France. For, though the English reaction against Mercantilism began earlier than the French, the French moved much more quickly than the English, which it influenced greatly.

So responsive were the French to authority and leadership even in details, that in France perhaps more than anywhere else, certainly more than in England, the success of a paternal economic policy depended on the genius and wisdom with which it was carried out, rather than on the soundness of its scientific basis. Sully's Stoic preference for agriculture over trade and manufacture had worked great good for France, because of his fearless, energetic uprightness. And Colbert's more moderate preference for trade and manufactures over agriculture had wrought even greater good; because, while as upright and strong as Sully, he had more knowledge of his business and a greater mastery of details. In prescribing uniform sizes for certain goods he misapplied, or applied prematurely, the principles which underlie the modern movement towards standardization. Other statesmen in England and elsewhere had endeavoured to develop mediaeval traditions on similar lines: but he went beyond all in resolution and even in extravagance.

His rules turned to bureaucratic folly in the hands of feeble successors: but he himself was ceaseless in his endeavours to find out where his rules worked mischief, and to modify them; or, on occasion, to wink at their evasion. Like all protectionists of genius, he never lost sight of the fact that there is a *primâ facie* case against all obstacles to free trade; and that, to justify their existence, it must be proved that they develop industry and trade in some directions more than they check it in others. But, even more than most other protectionists of equal genius, he exaggerated the constructive force of his expedients. He dwelt fondly on each little favourable sign; and he instinctively looked away from its evils¹.

But while strengthening the custom-houses at the frontier and sharpening the outlines of international trade, he abolished

¹ It may be noted that the extravagance of French Mercantile regulations was prominent in the minds of English economists in comparatively recent times. See for instance Mill, *Political Economy*, v. xi. 7.

as many local customs barriers as he could; and he blurred out those features of interprovincial trade which till then had had much of the real character, and something of the form, of international trade. He aimed at welding France into a united industrial country, which should export highly finished and high priced goods in return for cheap raw materials and the precious metals, the sinews of war, for his extravagant master: and he aimed at creating the strongest navy in Europe. His resolution and the despotic power, which he wielded, enabled him in a decade to effect changes that seemed to belong to a century. Nowhere else did Mercantilism develop so quickly its beneficial influences: and its evil influences were kept well in check in France, so long as his hand was at the helm. But it depended for its success on one master mind; it did not enlist the critical and constructive faculty of a nation in its service, and it lacked versatility. The centralized administration of France, while admirably adapted for turning existing knowledge to a speedy account, proved itself inferior to England's enterprise in the power of adapting itself to new wants and of devising new methods for overcoming new difficulties: therefore its mistakes led to a sudden and fleeting reaction towards free trade¹.

During the first half of the eighteenth century France was learning more from England than England from France. But French influence is clearly seen in the tone of the Scotch Hume in the middle of that century: and, though his thought reacted much upon that of France, yet that debt was far more than repaid by the influence which France in her turn exerted on Adam Smith; who was the pupil of the Physiocrats and of Turgot in their pursuit of economic freedom, as well as of Petty and Locke and Hume².

¹ The paternal policies of the French rulers, of which Colbert's is the most conspicuous, were much misunderstood, and unfairly judged in England until recently; and this fact partly excuses the exaggerations of List's vehement eulogy of Colbert. The whole movement is well described in Levasseur's *Histoire des Classes Ouvrières en France avant 1789*. See also Neymarck's *Colbert et son Temps*, especially Part II.

² Hume's hatred of monopolies and artificial privileges, to which reference has already been made, seems to have been derived from his study of contemporary and past facts at least as much as from the general principles of liberty. In fact, though he was fond of Turgot, he was impatient of the confident dogmas of the French "Economists."

APP. D, 6.

The new French system was the work of greater thinkers and more interesting men than that which went before it. But though it was in harmony with the words that were on men's lips, it was alien to their latent habits and instincts: it never became an effective part of the principles of action of the ordinary Frenchman in common life. Economic liberalism has been assimilated by many leaders of thought in France, but not by the great body of the people; and, partly for that reason, its doctrines have been stated there with more confident precision than anywhere else.

The suffering of the French people under the pressure of the extravagance and privilege of the ruling classes, had moved the hearts of Sully and Colbert, of Vauban and Boisguilbert: and it became so grievous in the middle of the eighteenth century as to dominate all French economic thought. Under the influence of Rousseau, and afterwards of the American Revolution, the demand for the abolition of monopolies and privileges ceased to be content with partial reform of details. The same spirit that levelled all social distinctions without compromise, and without consideration for special cases or for indirect effects, bore fruit in the absolute wording of the economic dogma, "Let people make whatever they like and move wherever they like":—for this is the true meaning of *Laissez faire* and *Laissez passer*: phrases which have come to be used by politicians in a sense entirely different from that which properly belongs to them; with results most detrimental alike to clear thinking and fair controversy. *Laissez faire* did not imply that Government should abstain inertly from constructive work: it meant simply that anyone who thought that he could make anything with advantage, whether on old lines or by a new method, should be at liberty to do so. *Laissez passer* had its chief application to difficulties that did not exist in England. It meant that all the various obstacles to the free passage of goods between the various Provinces of France should be removed. England had realized her Zollverein many centuries before. France got hers at the Revolution: Germany had still to wait for another half century. *Laissez passer* was however sometimes interpreted that all frontier duties, even those between different countries,

should be abolished: and for that the world is not ready APP. D, 7 yet¹.

The American Revolution, which impelled England towards broader views of her national economy and of the duties which she owed to her colonists, set France for the time even further on the path towards freedom of trade. Pitt welcomed the proposal made by her that the two countries should trade almost as though they were one. But the English people held back; and shortly afterwards war obliterated all traces of the great endeavour².

The Physiocrats, and in a less degree Turgot, believed that an absolute government instructed by the philosophers was the best adapted for enabling the people to thrive in the practice of the new principles. But here Adam Smith, following the tradition of his chief English predecessors, parted from them³.

7. Adam Smith frequently showed that the interests of individuals may lead them to action which is not the most conducive to the well-being of the community, themselves reckoned in. But he held that Government intervention was likely to be exploited by intriguing traders.

¹ Turgot wrote to Hume in 1766, "Our economic philosophers, followers of Quesnay, will maintain vigorously their master's system. It is a system from which English writers are at present very far, nor can we hope to see them adopt it for a long time to come, so difficult is it to conciliate its principles with the condition of monopolising the commerce of the universe." See Leon Say, *Turgot*, ch. III.

² Lecky, *Eighteenth Century*, v. pp. 37—46 (ed. 1), gives an instructive account of the debate in the House of Commons on the proposal.

³ No doubt the Physiocrats were somewhat influenced by the fact that a democratic nation is often harder than an autocratic ruler would be, to a nation subject to it. For instance, the economic and the general interests of African slaves and American Indians were cared for better by the French, and even the Spanish, Governments than by English colonists, who were masters of their own destiny. But the true cause of this fact is that no one is so good a judge of his own case as are onlookers, who have no personal interest in it. The Slave Trade indeed shows to a greater disadvantage than any other incident the English "concrete" method of judging each case by itself and with reference to its own special incidents. For the best knowledge of those special incidents lies with those who are most nearly affected by them; and these are the very people whose judgments are likely to be unconsciously warped by their interests. It should be noted, however, that the laws relating to slaves in some of the aristocratic colonies of the South were "of extreme ferocity"; but those in the bourgeois Pennsylvania were mild. See Lecky, *England in the Eighteenth Century*, ed. 1. vi. p. 282.

APP. D, 7. The Mercantilists have no doubt suffered injustice by being taken too literally. But to do more than justice to them, is to hide away the real causes of the intense opposition to their doctrines, which was aroused in the minds of Adam Smith and other far-sighted men; who, being nearer to them than we are, knew what sort of men the bureaucratic officials were, and what sort of advice they would get from self-confident amateurs such as Sir James Steuart and Gee¹.

Adam Smith himself frequently stated or implied that it would be possible for an omniscient and omnipotent Government to direct the actions of merchants, and other people, in a course more conducive to public well-being than that in which they would be led by their own interests. But he did not believe that Governments, such as he knew them, would have any considerable share of the knowledge of detail, the ceaseless forethought, the untiring invention and resource, the constant attention to the relative proportion of various elements and the sound judgment of them, which would enable an omniscient Government to have an advantage over the automatic action of private interest. He held that, even if a statesman is the ablest man in his country, he cannot dividé out his mind among a great number of trades and businesses; and give to each of them a better judgment, than will be worked out by the combined mental activities of hundreds of more or less able merchants, who give much of their time and strength to that one thing. And as to the moral integrity of statesmen, he was less sanguine than the simple-minded Quesnay and many of his followers; for they anticipated some modern socialists in the faith that, so soon as a wise and righteous

¹ Adam Smith never mentioned his contemporary Steuart; but probably had him in mind all the more. Steuart was a Jacobite who lived much in France, and whose political sentiments were much impressed by French associations: his economic thought is mainly a mixture of fresh, shrewd individual observations with crude remains of old Mercantile fallacies.

Gee, finding that many of our fishing galleys went straight from Newfoundland to the South of Europe, would discourage that practice; and even prohibit it, unless they cleared from a British port on their way back. He would thus make it "their interest to stick to their fishing and coasting, which I am persuaded would be more to their advantage than their voyage to the Straits [of Gibraltar]; for where people have business enough in a very few employments, it is the surest way to get riches." The fishing folk may think otherwise: but the Statesman instructed by Gee will know better.

system should have been established, the upright motives, by which they themselves are led, would be found in the ordinary man, frail as they knew his virtue still to be. APP. D, 7.

Adam Smith concedes that "by such [Mercantile] regulations a particular manufacture may sometimes be acquired sooner than it could have been otherwise, and after a certain time may be made at home as cheap or cheaper than in the foreign country¹." But he insists that the immediate loss is certain, and the future gain problematical. Here and elsewhere he contrasts on the one hand the abstract chance that such a policy might be carried through with benefit to the nation by statesmen of superhuman knowledge, intelligence, activity, and probity; and, on the other hand, the concrete realities of the world in which he lived. Schmoller, the ablest apologist of Mercantilism, sums up the situation by saying:—"It is easy to understand how disgusted an honourable man like Adam Smith must have been by the filthy (*schmutzig*) hunting after their private gains by the business men, whom he was able to observe day by day in London²."

Another characteristic of Adam Smith's attitude to freedom of trade, which had been but partially anticipated by the Physiocrats, was the prominence which he gave to the interests of the great body of the people; or, as is sometimes inaccurately said, of the "consumers" as distinguished from the "producers." The earlier free traders, Dutch and English, had not indeed neglected that point; but they had urged the benefits of freedom chiefly as a means of promoting the commercial activity of the nation and augmenting the sources of public revenue: and their opposition to the exclusive privilege of a group of traders or producers was based chiefly upon the injuries which it inflicted on others who were engaged, or might wish to engage, in that particular trade or industry; or in some other that was directly dependent upon it³. But Adam Smith went beyond them in laying stress on the losses which the people suffered from an artificial constriction of a channel by which their needs might be supplied.

¹ Book iv. ch. 11 (p. 422 of vol. 1 of Cannan's edition).

² *Die Englische Handels-politik des 17 und 18 Jahrhunderts*, p. 23.

³ Compare Laspeyres, *Volkswirtschaftliche Anschauungen der Niederländer*, pp. 164—5.

APP. D, 7.

It has been supposed by List and by other writers, especially in Germany, that when Adam Smith urged that it would be wise to allow the individual greater freedom in trading with foreigners, he desired to substitute cosmopolitan sympathies for a national spirit in trade. But in fact he had a strong national spirit himself; and the arguments, by which he and his followers advocated their policy, would certainly have fallen on deaf ears, if they had called on the ordinary Englishman to count a benefit to his fellow-countrymen as of no greater importance than an equal benefit to foreigners.

Adam Smith protests that "the modern [Mercantile] maxims of foreign commerce by aiming at the impoverishment of all our neighbours...tend to render that very commerce insignificant," and that if England and France "were to consider their real interest without either mercantile jealousy, or national animosity, the commerce of France might be more advantageous to Great Britain than that of any other country, and for the same reason that of Great Britain to France." But he goes on, "Being neighbours, they are necessarily enemies, and the wealth and power of each become on that account more formidable to the other¹."

Again, "If any particular manufacture was necessary for the defence of the society, it might not always be prudent to depend on our neighbours for the supply; and if such manufacture could not otherwise be supported at home, it might not be unreasonable that all other branches of industry should be taxed in order to support it. The bounties on the exportation of British-made sail-cloth and British-made gunpowder may perhaps both be vindicated upon this principle." And similarly he admits the scientific plausibility of arguments in favour of bounties to herring fisheries on the ground that "though they do not contribute to the opulence of the nation...they contribute to its defence by augmenting the numbers of its sailors and shipping...at a much smaller expense than by keeping a great standing navy²." These suggestions foreshadowed the impulse which the recent world-war has given to Britain's inclination to incur considerable present sacrifice, in order to increase her

¹ Vol. I. pp. 459, 460 of Cannan's edition.

² *Ib.* vol. II. pp. 23, 19.

self-sufficiency at times, when hostile submarines might lower her command of imports, in spite of her powerful navy. APP D, 7.

Again in matters of purely trade policy, though he urges that we should not injure ourselves merely for the sake of injuring other nations, he admits that when there is a prospect that, by injuring them we may cause them to cease injuring us, it may be wise to do so even at some cost to ourselves. He admits that the policy of retaliatory duties is not only defensible theoretically, but may occasionally be prudent, even when account is taken of all the complications which it involves.

He discovered numerous and important exceptions to the "natural law of liberty," and these discoveries were seldom *à priori*; they were nearly all supported by inductive studies of the world around him. Further, his views of Nature and of life, were very broad. It may be true that he unconsciously assumed that there was "something of a Scotchman" inside of every body: but he was fond of watching varieties in national character. He was the last person in the world to think that wealth was the aim of life; the last person to suppose that the ideals of a noble life should be subordinated to the growth of riches by any wise and self-respecting individual or nation.

And yet, as a shrewd observer of human nature in the eighteenth century, he concluded that a strict logical separation of the business element from the emotional elements of private and public policy was the best, and indeed the only possible, safeguard against the weaknesses of ambitious statesmen and the wiles of fraudulent traders. His position was:—let us first ascertain how the nation may best do its business, regarded as business. That being done, let us bring into the problem higher considerations: let us take account of the fact that the life of a nation is something more than the aggregate of the lives of its members; and let us face material loss bravely, if it must be encountered on the way towards a higher end. But let us count the cost; and let us move with special caution if the cost to the State will bring with it any political advancement, or any material gain to the individuals or the "interest" by whom it is urged¹.

¹ Some misunderstandings of Adam Smith's position have been imported into this country from Germany; but unfortunately the corrections of these

APP. D, 7. mistakes, which have been made in Germany, have not been noted here. Thus Adam Smith says:—"By pursuing his own interest he [the individual seeking an employment for his capital] frequently promotes that of the society more effectually than when he really intends to promote it" (Book iv. ch. ii. vol. i. p. 421 in Cannan's edition), and Knies, in a spirited effort to induce his countrymen to substitute a real broad-minded Adam Smith for that doctrinaire whom many of their writings portray and label "Adam Smith," says that this critical passage is commonly quoted from a German translation by Starner, which omits the word "frequently"; and thus makes Adam Smith express a doctrine, as fundamentally opposed to the whole trend of his thought, as it is to that of List himself. See Knies, *Die politische Oekonomie vom geschichtlichen Standpunkte*, ed. of 1883, p. 226. In the preceding pages Knies had given many instances of strong expressions of Adam Smith as to the failure of the private interests of landowners, traders and others to direct their actions into that channel which would be most to the aggregate wealth, their own of course being reckoned in; and reckoning therefore being made only in terms of money value, not of true social value. And Held (*Soziale Geschichte Englands*, p. 160) is wroth against those who take Adam Smith's "doctrine of the natural and necessary harmony of all interests as a general and fundamental principle," ignoring his constant arguments to the contrary; and laying excessive stress on occasional passages in which he speaks of "the unseen hand which leads a man to this end, though he has not intended it himself." Such men he concludes "can be excused only on the ground that they neither see nor hear anything beyond a few phrases, which dominate their minds."

APPENDIX E¹

THE BRITISH MOVEMENT TOWARDS FREE TRADE

1. *The policy of Protective duties was discredited in Britain by the mismanagement of the Corn Laws: Sliding Scales of duties, designed to keep prices steady at a high level, made them very unsteady.* APP. E, 1.

It has already been indicated that the British movement towards free trade in the second quarter of the nineteenth century was strengthened by the mismanagement of Protective duties on wheat. This Section and the next are occupied with details, which may not be of general interest; though they bear directly on a great controversy.

Adam Smith's anger was roused by the inconsistency of statesmen who compelled the farmer to sell his produce retail, and forbade the manufacturer to do the same thing. English statesmen, like others, had begun by prohibiting the exportation of grain; then they allowed it subject to taxes and other conditions; and later still they encouraged it by bounties when the price was below a certain level. These bounties aimed at steadying the national market for grain: in an ordinary year enough was to be grown to allow for exportation, in a bad year all was to be retained at home, and thus scarcity was to be avoided. But the bounty tended to send abroad the surplus of a good year, so that in a bad year as much importation became necessary as if there had been no bounty. Thus the double cost of carriage was wasted, and English people had to pay for their food in good and bad seasons alike at rates which would naturally arise only in bad seasons. During the years 1773 to 1792 the English corn trade was left practically

¹ This Appendix is associated with I, iv, 5, 6.

APP. B, 1. free to follow its own course; and Adam Smith's judgment as to the evil influence of the bounties on exportation received some support from the fact that during these years the price of wheat fluctuated less than during the preceding period; in which costly bounties had been given with the avowed purpose of steadying prices, and with a side view at their effect in raising rents.

The course of prices during the war was irregular. War risks and high freights, blockades, and currency troubles were origins of disturbance in which effects came at irregular intervals after their causes: and to these were added an abnormal number of very bad harvests¹.

On the whole the war brought prosperity to landlords and farmers: they learnt to take a lofty view of their stations and the mode of expenditure appropriate thereto. They had been shaken by a fall in the price of wheat from 155s. in August, 1812, to 73s. 6d. in December, 1813; and Committees of the two Houses in 1813—14 investigated the price which was necessary to give the farmer a fair profit, with just about that amount of bias which is commonly found, when persons representing any one interest meet to appraise its claims relatively to others. They thus prepared the way for the law which was to prevent the peace from bringing its natural blessings to the English people. In 1815 the importation of wheat was prohibited except when its market price was above 80s.: although when it was at that price, the wages of the ordinary labourer and his family would barely purchase enough bread to satisfy their hunger, if spent exclusively on bread.

The rents of land had been made very high by the war and bad harvests, which raised the limited home supplies to extravagant prices: the rate of interest had also been raised high by the destruction of capital, as was shown by the low price of consols. The landlords, like many people even now in such cases, argued unconsciously in a circle: they thought that

¹ In eleven years out of twenty-two, viz. 1794, 5, 9, 1800, 4, 7—12, the harvests of corn and especially of wheat were deficient: in some the scarcity was "of a desolating character extending over the greater part of Europe." (Tooke, *History of prices*, II. 347.) When crops were rather poor in England, but not abroad, freights with insurance sometimes reached from 40s. to 50s. a quarter for voyages of no very great length.

rents ought to be sustained so as to continue to pay about this high rate of interest on the inflated prices; and in such reckonings, though not when setting a price on their land for sale, they were likely to leave out of account the income of social amenity and political influence to be derived from it. They believed that the stability of Government and the safety of the country depended greatly on the maintenance of the dignity of their order¹. APP B, 1,

In 1828 recourse was had to a vigorous application of the plan of taxing the imports of corn on a sliding scale, that is, so that the tax was high when the market price was low, and low when the market price was high. Great benefits to the farmers were anticipated from this plan; but it turned out to be injurious to all concerned: and, since its failure contributed greatly to the downfall of the system of Protection, the motives which led up to it, and the causes of its failure deserve some detailed notice.

Its advocates seem to have somewhat overrated the advantages of steadiness of price; to have greatly underrated the cost which the various schemes proposed by them for obtaining it would inflict on the nation; and to have made no approach to a solution of the scientific problem:—what are the conditions under which an import duty, whether simple or on a sliding scale, will make for stability? Conditions can indeed be imagined under which a sliding scale might form part of a policy that would make for stability. But under the conditions of wheat supply and demand in their time, it necessarily made for instability. Let us look into this.

European wheat trade in the first half of the nineteenth century was conducted under very difficult conditions. Wheat is too heavy to be carried long distances, even on good roads: and the roads in Central and Eastern Europe were very bad. Some parts of North-Western Europe had good roads, and some had excellent water communications: but, as most of them

¹ The more old fashioned among them would have endorsed Arthur Young's dictum: "None but a fool can imagine that the landlords of a great Empire are to yield to the transitory sons of trade and manufacture." (Quoted by Buxton, *Finance and Politics*, I. 74.)

APP. B, 1. bore a relatively dense population; they needed their own crops for themselves; and, indeed, wheat is not partial to moist lowlands. The main trouble however arose from the facts that (1) large organized production and trade need confidence on the part of producers and exporters that they will find a steady market for any goods which they may offer; and (2) the only means by which the price of an uncertain crop, such as wheat, can be steadied to the home producer, are just those which make the country's demand for imported wheat uncertain and unpredictable. The two chief means that might be adopted for that purpose are (a) to give an export bounty on wheat when its market price is below a certain level; and (b) to tax highly or even prohibit its importation when the price is below a certain other limit, not much higher than the first. Several responsible writers have urged that, if it were thought worth while to incur the expense of artificially steadying the price of wheat, a two-sided arrangement on these lines would have been the best.

Such a scheme might effectively maintain a steady price, in a case similar to that of Greece to-day, though of course at a great cost to the country: for her total demand on the world market for wheat is very small relatively to the aggregate supply, which will in any case pass through the Mediterranean from the east and the west, the north and the south. But even in such a case as hers, no arrangement of import duties could steady prices unless accompanied by export bounties, so contrived as to carry off any surplus of home production over consumption which might be caused by several excellent harvests in succession.

But England's position in the first half of last century was very different. She was the only large importer of wheat: and therefore it was to her interest to let the foreign producer know what tax he would have to pay on selling it to her. A moderate fixed duty would have discouraged him only a little: he was almost wholly discouraged by being told that unless England had a bad harvest his wheat would be admitted only after paying an exorbitant tax. Tooke, after making a special study of the subject concluded that, when wheat was scarce in England, it was a good deal more likely than not to be scarce

also in North-Western Europe generally: and, so far as this APP. E, 1. was the case, the foreigner could expect to sell under a low tax only when he had not much to sell. Consequently he grew little or nothing definitely for the English market; and England's imports were made up of the surplus of wheat crops of districts, in many of which rye was the staple food; and the supply which she got from any one port would often vary tenfold from one year to the next¹.

Thus the sliding scale made the foreign growing of wheat for the English market to be an act of gambling rather than of sober business: and it also induced, if it did not compel, the importer to arrange his sales so as to intensify the fluctuations of prices; and so that his wheat greatly injured the English farmer without greatly benefiting the English consumer. The farmer did not sell at very high prices, and the English consumer often paid very high prices; while the English Exchequer reaped scarce any profit. For the importer took care not to sell till the English stocks were nearly exhausted; and the consequent rise in price let his wheat in at a low duty. Of course speculators are always inclined to hold back for an expected rise in price: but, when a small rise in price will bring a large reduction in duty, it is worth while to wait for that rise, even at a great risk of failing to sell at all².

¹ This can be traced for the years 1800—30 in J. Marshall's great *Digest* of official statistics published in 1833, vol. II. p. 104, and for 1828—30 in Tooke's *History*, vol. VI. pp. 451—3. The irregularity of the figures there given is in great contrast to the regularity of the corresponding tables in recent numbers of the *Statistical Abstract for the United Kingdom*.

The total prohibition of the importation of wheat when the price was below 80s., which ran from 1815 to 1828, caused the highest price of a year to be often nearly 50s. above the lowest. The expectation of a price approaching to 80s. induced farmers to sow wheat even on damp, cold hill-sides, hiring labour, in tacit combination with one another, at wages that often needed to be eked out by allowances from the parish.

The sliding scale was in operation from 1828 to 1843. The following average prices (in shillings and pence) for these 26 years are eloquent.—83, 8; 72, 3; 65, 10; 64, 5, 43, 3; 51, 9; 62, 0; 66, 6; 56, 11; 56, 9; 60, 5, 66, 3; 64, 3; 66, 4; 58, 8; 62, 11; 46, 2; 39, 4; 48, 6; 55, 10; 64, 7; 70, 8; 66, 4; 64, 4; 57, 3; 50, 1.

² A few more details may be added. The duty was practically prohibitory when the price was low. It fell to 16s. 8d., when the price was 69s.; and then the merchants received 52s. 4d. net. But if they held back till the price was 73s., they paid only 1s.; and received 72s. net. *Consequently they*

APP. E, 2. In the result prices were very irregular. In 1819—1822 great numbers of farmers failed, because grain was abundant: a group of indifferent medium harvests kept them fairly prosperous till 1831, when they were again brought into straits by good harvests¹.

2. *The repeal of the Corn Laws could not produce its full effect at once. It did not cause a great fall in the price of wheat: but it kept the price almost stationary in Britain while it was rising in neighbouring countries.*

Some authoritative writers have claimed that the history of British wheat prices before and after 1850 proves that the Corn Laws did not raise prices very much, and therefore did not inflict great injury on the people. As much stress has been laid on this argument, it calls for examination.

The difficulty of obtaining grain from abroad in the second quarter of last century did not lie in scarcity of land for growing it, or of people willing to work on the land for low remuneration. If England had offered a fairly steady demand for ten million quarters of imported wheat, many rich areas would have improved their communications with great European rivers and have been able to send her large supplies at a low cost. But as things were they lacked the incentive for such developments:

manœuvred to get the price towards 73s.; and then they imported (or took out of bond) suddenly large quantities: and thus lowered the price a little. That brought the tax up somewhat; and therefore other merchants were warned off from intruding on their market. Many English farmers could not wait, and sold at relatively low prices. Therefore they did not gain much by the tax: while the Exchequer gained very little: but the poor consumer paid terribly. The foreigner who happened to have a surplus gained on it. But, as in another year he might probably be unable to sell for exportation to England at all, he grew little or nothing specially for exportation. A full study of the problem is made by Tooke and Newmarch, l.c. vol. III. ch. I. In vol. V. p. 168, it is observed that many farmers being in arrear for rent, or pressed for payment of a debt, force the whole or nearly the whole of their stock for sale immediately after the harvest: and of course relics of this tendency remain now.

¹ They weathered that misfortune better than the last, for by the preceding experience "they had been taught prudence," and had become "a different class of men to what they were" (*H. of L. Committee on Agriculture, 1836, Q. 3163, 4*).

for they could not expect to sell their wheat in any country except England, at a price very much higher than that of their own homes. So, when at last England's market was thrown open, she had to rely largely upon those sources of supply which were already in fairly close touch with the sea¹. APP. E, 2.

Therefore the full effect, which the opening of England's ports to wheat exerted on the available supply of wheat, would not be likely to show itself for many years; and meanwhile prices in the world's market for wheat were disturbed by the new gold supplies beginning about 1850, by a series of wars and by some exceptional harvests. In many years indeed these disturbances exerted a much greater influence on the price of wheat than had been exerted by the rather low import duties levied in England after 1843.

To go into particulars:—Bad harvests had been exceptionally frequent during the great war; but they were exceptionally rare during the next twenty years. In each of the six years 1832—7 the home crops were sufficient for the people's consumption: the import duty was practically inoperative; and prices were relatively low in spite of it².

¹ Accordingly, when Jacob, the best authority on the question, was sent to investigate the Baltic and Black Sea sources of supply in 1826—27, he reported that, "if the quantity of corn grown in this country were diminished one-tenth.. we should have to pay the foreigners double as much as we now pay the English farmer. There is corn enough...but it must be drawn from such a distance with land carriage." He adds that some of the mariners did not understand the use of the compass: and that Russian grain seldom passed out of the Mediterranean.

It is true that the coast line from Hamburg to Riga was the chief source of England's supplies of wheat then and for some little time afterwards; that the five great river basins which these ports served were so far distinct that variations in the price of wheat between different parts of Prussia were much greater than between different parts of England: and that prices were habitually rather high in Westphalia, where population was relatively dense. See a study of this problem for the years 1816—41 by Rawson in the *Statistical Journal*, vol. v. He makes out his case both by exclusive reference to wheat, and—which is fairer—by comparing wheat in England with rye in Prussia. His analysis of the causes of such variations seems superior to that in the better known study by Cliffe Leslie of "Prices in Germany in 1872." Marshall's *Digest*, 1833, Part II. pp. 98—100, contains the chief results of a Foreign Office inquiry in 1826 as to the prices of wheat in various places from 1700 to 1825: towards the end, the inquiry ranged over 32 European and 4 American markets.

² See Tooke and Newmarch, *Lc.* vol. v. pp. 53—66 and p. 223. France in

APP. X, 2.

After two bad and several moderate harvests, the rains of 1845 together with the potato disease caused such distress that Peel committed himself in 1846 to complete repeal (save for the Registration duty) in 1849. The harvest of 1849 was good: but, except in that year, the price of wheat was kept low in the years 1847—52 by abundant, almost untaxed, supplies from parts of the Continent in which the harvests had been good, though those in England had been bad: it has been estimated that under the old régime English prices would have been 20s. higher than they actually were. In 1853 harvests were bad throughout Northern Europe, and prices ruled high: but they were not higher in England than on the Continent, though they always had been under similar circumstances before.

During all these years the main roads were being improved everywhere: and railways were helping to keep the "Gazette" prices of English wheat down nearer to those of foreign wheat at English ports than before. But the railways of the Continent were of relatively little service. They had indeed made an appearance in Central Europe before 1846; but, of course, they went first to thickly peopled districts, which had little grain to spare. And it was not till the Crimean War had shown the supreme military importance of railways running to the frontiers, that many of them were driven through the large wheat-fields of Central and Eastern Europe.

The Crimean War was accompanied by general bad harvests; freights were for a time very high, and the Russian trade was of course interrupted. To these powerful causes of high prices another was added. For before the repeal of the Corn Laws the world's stock of gold had been shrinking relatively to the work it had to do; and, in consequence, general prices had been falling: but the new supplies of gold, coming suddenly from California and Australia, upset men's cool judgment and forced general prices up to a temporarily inflated level.

It was just when all these exceptional causes were working together that that rise of wheat to a little over 70s. occurred,

particular was a large exporter: her high import duty was therefore inoperative; and her wheat prices of course fell very low. The significance of this fall has sometimes been mistaken, and used amiss in controversy.

which has been urged as a chief reason for doubting the influence of free importation in lowering the price of wheat. And a second rise in 1867 to a price a little above 60s. had been forced to the same service; though it is amply accounted for by simultaneous exceptionally bad harvests in America and Europe in 1867, following after the indifferent harvest of 1866.

This brings us to the time when the conditions, which govern the trade in wheat, began to assume their present form: and the price of wheat in England ceased to be materially higher than in neighbouring countries, in spite of her rapidly increasing and unique dependence on foreign supplies. She was favoured by her geographical position relatively to America: and later on prices in Germany were influenced by the increasing stringency of her Agrarian policy. Thus prices in England have fallen increasingly below the prices in Germany and France: it is true that they did not fall much between 1849 and 1875: but in the same time they rose greatly in those countries. This contrast embodies the chief result of the repeal of the Corn Laws: it did not cause a great fall in the gold value of wheat in England; but it did prevent a great rise in that value¹.

¹ The following table is taken from the article by Conrad in the *Handwörterbuch der Staatswissenschaften* on "Getreidepreise." It represents prices per metric ton in marks.

Year	England	France	Prussia	Province of Prussia	Westphalia
1816—20	364,0	265,5	206,2	181,8	240,8
1821—30	266,0	192,4	121,4	109,2	132,6
1831—40	254,0	199,2	138,4	133,8	147,8
1841—50	240,0	206,6	167,8	160,4	182,0
1851—60	250,0	231,4	211,4	199,6	223,6
1861—70	248,0	224,6	204,6	195,0	218,6
1871—75	246,4	248,8	235,2	225,0	246,0
1876—80	206,8	229,4	211,2	202,2	222,4
1881—85	180,4	205,6	189,0	182,6	197,6
1886—90	142,8	193,2	173,9	165,6	183,6
1891—95	128,2	178,5	165,5	163,2	173,4
1896—1900	134,3	178,6	160,9	157,9	168,4
1901—05	140,3	178,1	163,9	181,9	165,8
1906	142,5	—	173,4	170,5	178,0
1907	143,5	—	200,3	202,0	202,0

During the whole period France has produced nearly all the wheat she requires; but she has long ceased to export it in considerable quantities. The

APE, B, 3.

3. *Although economic science was much advanced by Adam Smith's successors, their views were generally less broad than his: and their doctrines were sometimes converted by weak or partisan adherents into absolute dogmas*¹.

Adam Smith's successors had less of that breadth and moderation which come from a long training in philosophic and scientific thought. Most of them had a great experience of affairs, and had accustomed themselves to speak with that force and directness, which give special value to the utterances of a business man when he is speaking on matters within his personal knowledge; but which, when he strays beyond them, often tempt him to make simple sweeping statements of broad scope without the necessary limitations and conditions. And unfortunately two strong but exceptionally abstract thinkers, Bentham and James Mill, threw their influence on the side of large generalizations. As a rule however the dogmatism which seemed to pervade the chief English economic writings of the first half of the nineteenth century was apparent, rather than

Province of Prussia has always produced wheat largely in excess of her own requirements. Westphalia has needed increasingly to import supplies from other parts of Germany, or from abroad. Prussia, though formerly an exporter on the balance, now imports more than any other country except England: though of course ordinary statistics do not distinguish her trade from that of Germany. A comparison between Westphalian and English prices is specially instructive, because both Westphalia and England import wheat largely.

The prices in London are about as low as anywhere in England. The prices in Berlin for the more recent of the years here shown are rather above those in Westphalia; though Berlin is on the border of the chief wheat lands of Germany.

Germans have paid special attention to relative variations of prices of rye in Germany and Russia: and have rightly laid great stress on the fact that, there being no true world market for rye, these variations are more erratic than those in the price of wheat. A few paradoxes which have disturbed some English writers seem to be explained by the fact that a country may import rye on the balance from another, where the average price is higher, if her own has been harvested in bad condition, and that of the other in good.

¹ This Section and the next are, in part, reproduced from my Presidential Address to the Economic Section of the British Association in 1890, which is accessible in *The Statistical Journal* for that year. Professor Nicholson well remarks that "as Adam Smith had influenced Pitt, so Ricardo influenced Peel": and in view of the relative lack of independence of Ricardo's chief followers "fortunately it was Peel who translated his ideas into practice." *Cambridge Modern History*, vol. x. pp. 773—4.

real. It represented a dry businesslike mode of speaking, in which much is left to be filled in by the common sense of the listener; it was not a premature attempt at a systematization of knowledge. But it misled adherents as well as opponents, and the efforts of English economists during the subsequent half-century have scarcely sufficed to liberate their science from this tradition of dogmatism. APP. E, 3.

The change may, perhaps, best be regarded as a passing onward from that early stage in the development of scientific method, in which the operations of Nature are represented as conventionally simplified for the purpose of enabling them to be described shortly; and entering on a higher stage, in which they are studied more carefully, and represented more nearly as they are, even at the expense of some loss of simplicity, definiteness, lucidity and consequent popularity. The English economists of fifty years ago were gratified, rather than otherwise, when some faithful henchman, or henchwoman, undertook to set forth their doctrines in the form of a catechism or creed; whereas now they recognize that every short clear statement of economic doctrine must be a truism, unless it be false.

It has, indeed, been an unfortunate thing for the reputation of the older economists, that many of the conditions of England at the beginning of this century were exceptional, some being transitional, and others, even at the time, peculiar to England. Their knowledge of facts was, on the average, probably quite as thorough as that of the leading economists of England or Germany to-day, though their range was narrow. Their thoroughness was their own, the narrowness of their range belonged to their age; and though each of them knew a great deal, their aggregate knowledge was not much greater than that of any one of them; because there were so few of them, and they were so very well agreed.

Their agreement with one another made them confident; the want of a strong opposition made them dogmatic; the necessity of making themselves intelligible to the multitude made them suppress even such conditioning and qualifying clauses as they had in their own minds. Therefore, although their doctrines contained a vast deal that was true, and new, and very important; yet the wording of these doctrines was often

APP. B, 4. so narrow and inelastic that, when applied under conditions of time and place different from those in which they had their origin, their faults became obvious and provoked reaction.

It was clearly to the interests of England that her manufactures should be admitted free by other countries: therefore any Englishman who attempted to point out that there was some force in some of the arguments which were adduced in favour of Protection in other countries, was denounced as unpatriotic. Public opinion in England acted like the savage monarch who puts to death the messenger, that comes running in haste to tell him how his foes are advancing on him; and when John Stuart Mill ventured to tell the English people that some arguments for Protection in new countries were scientifically valid, his friends spoke of it in anger—but more in sorrow than in anger—as his one sad departure from the sound principles of economic rectitude. But killing the messengers did not kill the hostile troops of which the messengers brought record; and the arguments which Englishmen refused to hear, and therefore never properly refuted, were for that very reason those on which Protectionists relied for raising a doubt in the minds of intelligent and public-spirited Americans as to the scientific soundness and even the moral honesty of English economics. It is however to be remembered that, in that age as in the present, exaggerated notions of the scope and cogency of economic doctrines have been less frequent in calm academic discussions, than in heated political controversies: and especially in those in which business men, however capable and upright, have sought to find in economic doctrine a support for practical conclusions in harmony with their own experiences, opinions and sentiments:—and, in some cases, their own business interests.

4. *Overstatements of arguments in favour of Free Trade have retarded the general acceptance of that part of it which may justly claim to be of universal validity.*

The first great difficulty which English economists had, in addressing themselves to the problems of cosmopolitan economics, arose from the fact that England was an old country—older than America in every sense; and older than the other countries of

Europe in this sense, that she had accepted the ideas of the new and coming industrial age more fully and earlier than they had. In speaking of England, therefore, they drifted into the habit of using, as convertible, the two phrases—"the commodities which a country can now produce most easily," and "the commodities which a country has the greatest potential advantages for producing"; that is, will always be able to produce most easily. But these two phrases were not approximately convertible when applied to other countries; and when List and Carey tried to call attention to this fact, Englishmen did little more than repeat old arguments, which implicitly assumed that New England's inability to manufacture complex products had the same foundation in natural laws as her inability to produce oranges. They refused fairly to meet the objection that arguments, which prove that nothing but good can come from a constant interchange of product between temperate and tropical regions, do not prove that it is for the interest of the world that the artisans who are fed on American grain and meat should continue always to work up American cotton for American use three thousand miles away. Finding that their case was not fairly met, the Protectionists naturally thought it stronger than it was, and honestly exaggerated it in every way.

Looking back then, it is easy for us to see that English economists made a grave error of judgment as to the proportions of one leading problem of their own age, though not of their own country. They misjudged the needs no less than the potentialities of backward countries, and especially of new countries. They took too little account of the fact that, though any one county of England, which had latent resources and faculties for an advanced industry, would attract that industry to itself from other counties; yet what is true of counties is not true of countries.

If the neighbourhood of coal and other causes concentrate those English industries in which man's command over Nature is rapidly increasing, chiefly in the middle-west, the benefits arising from this new power are in great measure spread over the whole country. Those born in Devonshire and Sussex who have a turn for the rising industries, can generally remove to them

APP. B, 4. without snapping their main ties as human beings. But a new country may be dominantly rural; may lack the stimulus and culture of a nervous town life, and have no access to the economies of manufacture on a large scale: she will then derive comparatively little consolation from knowing that there are busy hives of industry and thought in remote lands.

The failure of English economists to allow for the special circumstances of new countries did not end here. They saw that Protective taxes in England had raised the price of wheat by their full amount; because increased supplies of it could be raised in England only at a more than proportionately increased cost of labour. They saw that the high price of bread had kept a large part of the population on insufficient rations, and had enriched the rich at the expense of a much greater loss to the rest of the nation. They saw that this loss had fallen upon those, who were unable to lose material wealth without also losing physical, and even mental and moral strength; and that even those miseries of the overworked factory women and children, which some recent writers have ascribed exclusively to recklessness of manufacturing competition in its ignorant youth, were really caused chiefly by the want of freedom for the entry of food. They were convinced that the benefits claimed for Protection in England were based, without exception, on false reasoning; and they fought against it with the honest, but also rather blind, energy of a religious zeal.

Thus they overlooked the fact that many of those indirect effects of Protection which aggravated then, and would aggravate now, its direct evils in England, worked in the opposite direction in America. For, firstly, the more America exported her raw produce in return for manufacture, the less the benefit she got from the Law of Increasing Return (*i.e.* the law that manufacture on a large scale is more economical than on a small). Thus her case was contrasted with England, who could manufacture more cheaply for her own use the more of her manufactures she sent abroad; and for this and other reasons, a Protective tax did not nearly always raise the cost of goods to the American consumer by its full amount.

5. *It does not appear that any eminent economist maintained a position of hostility to the Factory Acts; though they were bitterly opposed by some writers who had a superficial knowledge of economics.* APP. B, 5.

A reproach is sometimes brought against the British movement towards free trade, to the effect that the economic principles on which it was based, led to a condemnation of the Factory Acts.

It is to be observed that neither Ricardo, nor any other member of the great coterie by which he was surrounded, seems to have been quoted as opposing the early Factory Acts. It is however true that Lord Lauderdale, a brilliant free lance, keen withal and suggestive but erratic and unstable, opposed the Bill of 1818 in the name of "the great principle of Political Economy that labour ought to be left free." The Bill was chiefly concerned with the conditions of work of young children: and J. S. Mill may have had this contention in mind when he remarked, that however undesirable it might be to interfere with the freedom of labour without due cause, it was clear that "freedom of contract in the case of young children is but another word for freedom of coercion¹."

The most eminent economists in the period intervening between Ricardo's age and J. S. Mill's great work on economics, were perhaps Tooke, McCulloch, Newmarch, and Senior. The first three, though they wrote mainly on business affairs and said little on the human side of economics, were supporters of the acts. Tooke was the author of the celebrated *Merchants' Petition of 1820*, which initiated the movement for free trade, and the founder of the Political Economy Club: he superintended during many years the official investigations of the conditions of work in mines and factories, which resulted in reform. Newmarch, his coadjutor in the later volumes of the *History of Prices*, wrote (vol. v. p. 421) that it was "difficult to overestimate the importance of the factory acts." McCulloch, at whose bourgeois attitude Carlyle gibed with more eloquence than knowledge, endorsed their policy (*Dictionary*, p. 43).

¹ See Mill's *Principles*, v. xi. 8. Lauderdale's remark is quoted by Smart. *Economic Annals*, 1801—1820, p. 668.

APP. B, 5

Senior had perhaps a stronger intellect than any of these: and he was made Professor of Political Economy at Oxford, on the ground of his reputation as a very able man, with great knowledge of the world. He accepted the office, holding that though in other sciences a man must travel far before he was in a position to form a good opinion of his own, in political economy he could speak with confidence, when he had merely walked "to the end of his garden." After a five years' tenure of office, he passed to other work; and, when reappointed after an interval, he had learnt that economic problems were not simple; and he made brilliant contributions to the science. In his earlier phase he had opposed the Factory Acts; in his later phase he was one of their heartiest supporters¹.

These facts raise suspicion that the term "economists" must have been used in a sense in which it referred, not to the leading students of economics, but to politicians and others who affected to speak with economic knowledge, though with but a slight foundation for their claim. It is to such men that Greville refers in a passage which has been frequently repeated, and has even been used by economic authority of the first rank as sole and sufficient evidence for the statement, that English economists generally had eagerly opposed factory legislation: that is to say, it is taken to refer to the chief students of economics at the time, whereas in fact it refers exclusively to

¹ There seems to be some reason for thinking that, in his earlier phase, Senior fell into a rather common mistake as to the effects of such a change as a compulsory reduction of the hours during which manufacturers kept their machinery at work. He seems to have ascertained "by observation" that the total net profits earned by many mills did not exceed the loss which they would incur if compelled to reduce by an hour the time during which the machinery was running, and to have converted this result into the conclusion that those mills would make no net earnings if their hours were thus reduced. And yet it was well known that Robert Owen's brilliant experiment at the Lanark Mills claimed to have proved that the increased energy and care with which operatives, and especially children, worked for shorter hours, increased the output per hour greatly. And it was known that, even if a somewhat reduced output had resulted from the change, the manufacturers would have received some compensation, because the prices of their products would certainly have risen somewhat, both in the home market, and in those numerous foreign markets of which England had a firm hold. It was not possible indeed to be certain how far these palliatives would reach. But to ignore them altogether was unreasonable. And, in any case, it was wrong to claim for his conclusion, as Senior appears to have done, that it was based on direct observation.

members of Parliament. Speaking of the 1844 debate on the "Ten hours' bill," he says: "Some voted, not knowing how they ought to vote. Melbourne is all against the bill; all the political economists of course: Lord Spencer is strong against him¹."

This use of the term "economist" is not unknown in our day. It was adopted by those who, desirous of "keeping down the rates," organized themselves to oppose liberal public expenditure on the education of children; ignoring the fact that those who were giving their main energies to the study of economics, much as they might differ on other matters, were to a man convinced that parsimony in popular education is uneconomical and even wasteful. The following extract from a leading organ of public opinion when the case "*Regina v. Cockerton*" had made prominent the question whether rates might be levied to defray the expense of continuation schools is in point: "the judgment will not result in justifying either the elation of the economist or the despair of the educationist"

And a similar misuse of the term had found vogue in the discussions on the Factory Acts. Thus "Alfred" writes: "There had arisen in this country a school of political economists who professedly pointed to *The Wealth of Nations* as the text book of their practical philosophy, though they as a rule omitted to state that that celebrated book contained contradictory doctrines; they preferred popularizing the portions of Adam Smith's great work, which supported what they believed to be their own interests, failing to take any notice of portions of the same book fundamentally opposed to their favourite dogmas. These political economists were 'on principle' opposed to all state interference between labourers and capitalists²." There can be little doubt that "Alfred" has Miss Martineau in mind. W. Cooke Taylor refers to her "The Factory Controversy" as to be studied with great advantage for a knowledge of "the doctrine of the orthodox economists³." She wrote a

¹ Greville, *Memoirs*, vol v p 241.

² *History of the Factory Act*, p 115. This, the standard work on the subject, is attributed to Samuel Kydd. Miss Martineau's aid was acknowledged by a considerable present from manufacturers. Her simple diction, her honesty of purpose, and her lack of scientific capacity, combined to make her a good instrument for their purpose.

³ *Modern Factory System*, p. 397.

APP. B, 5. series of tales designed to enforce what she thought were economic doctrines: and, describing her preparation for the work she says: "In order to save my nerves from being overwhelmed by the thought of what I had undertaken, I resolved not to look beyond the department on which I was engaged¹." Now everyone who has endeavoured patiently and thoroughly to work to the roots of economic problems, has learnt that so many lines of communication run from every one of them to others, that no sound opinion on any of them, which is not exceptionally simple, can be formed, without a considerable knowledge of economics as a whole².

¹ *Autobiography*, I. 194.

² A short statement to the effect of this Section has been already made in my *Principles*, Appendix B.

APPENDIX F¹

THE ZOLLVEREIN

1. *Though the first fruit of Germany's consciousness of her unity was a desire for commercial federation, yet particular interests ruled many of the devious steps by which the goal was ultimately reached.* APP. F, 1.

Stein's liberation of the peasant from the yoke of customary service, and List's striving to hinder the merchant from importing English and other wares which might enter into competition with the weak manufactures of Germany, were in outer appearance movements in opposite directions: the one increased economic freedom, while the immediate tendency of the other was to check it. But they sprang from the same roots and their ultimate tendencies were in harmony.

The only part of Germany in which manufactures flourished vigorously early in the nineteenth century was Saxony; and perhaps partly as cause, partly as effect, she alone adopted the policy of free trade. By aid of the splendid system of education which she pioneered, she was able to hold her own in competition with British hosiery and other manufactures, in spite of her scarcity of capital, and her partial adherence to old fashioned methods². Prussia and several other states, which had much

¹ This Appendix is associated with I, VII, 1, 2.

² In 1812 more than a quarter of her spindles were worked by horses and other cattle; more than an eighth by hand, the remainder only being driven by water. Pohle, *Entwicklung des deutschen Wirtschaftslebens im 19 Jahrhundert*, p. 12. In 1845, when Saxon hosiery had almost driven English out of American and many Continental markets (partly indeed because of cheapness attained by a very large use of cotton as a material), an English hosiery manufacturer reported (evidence as to Frame-Worker Knitters collected by Commissioner Muggenidge, Q. 2819, 2820) Saxon operatives to be "much better clad and have a much more reputable appearance than the same class of operatives here, being much better educated," though their average wages were from 3s. 6d. to 4s. 6d. weekly.

APP. F, 1. through traffic, were inclined to facilitate the internal trade of Germany; but nearly all desired to levy taxes on imports of foreign manufactures, especially from the rich and highly equipped factories of Britain. They were able to make strong points of the "slaughter sales" of British goods in their markets, in times of commercial distress: and to insist that the British sliding scale tax on imported wheat, caused violent fluctuations in the price of wheat in many parts of Germany. Without attributing malignity to these actions, they were willing to give ear to such declamations as that of List, when he declared that between 1820 and 1840 the Germans had been to no good purpose "debased to be carriers of water and hewers of wood for the Britons: they were treated even worse than the down-trodden Hindu¹." Therefore it was inevitable that internal free-trade should be combined with a broad moderate system of duties on imported manufactures².

In one sense List was a free-trader: for he believed that the restrictions of the Zollverein as regards external trade would ultimately prepare the way for a perfect freedom of trade on the part of Germany, when she had grown to full strength, and could speak in the gate on even terms with England. And another South German, the economist Nebenius, a chief advocate—Roscher says the chief advocate—of the Zollverein, was an adherent of the English classical school, and regarded the astringent element in the Zollverein as a medicine, needed by a temporary malaise³.

¹ See Roscher, *Geschichte der Nationalökonomie in Deutschland*, pp. 965 and 973.

² The belief that German customs officials could not be trusted to form a good opinion as to the value of imported goods pushed simplicity to absurdity. Some things were not taxed at all: of the remainder all but 43 were charged 1s. 6d. per cwt., without any reference to their value. Each of those 43 had its own rate of taxation per cwt., with the promise that the charge should never be more than a tenth of the value. But that value was taken from fine qualities of the goods: so the coarse qualities destined for the poorer consumers sometimes paid taxes equal to their values. Bowring, *Evidence before the Committee on Import Duties*, 1840, Q. 793, 834.

³ Roscher says (*l.c.* p. 960): "If List rendered the service of making so-called public opinion receptive of the thoughts of the Zollverein, though indeed only on large vague lines, and in a way that must have been more deterrent than attractive to statesmen; yet his contemporary Nebenius was the first to give vitality (*Lebensfähigkeit*) to the same thoughts by a practical formulation of them that claims our admiration." He is jealous lest any suspicion should

Although the tendencies which were working all over Germany towards unity were largely idealist and even spiritual, yet the main driving force came from the needs and the ambitions of Prussia. Her position was exceptional: for her territory consisted of some seventy fragments; and her frontier lines were, in the aggregate, about eight times as long as those of a fairly compact country of equal area. She therefore eagerly desired a fusion, at least so far as trade was concerned, of her territory with that of the adjacent states. The patriotism and the broad ambition of the rulers of Prussia combined in "the first step towards what is called the *Germanization* of the people¹."

2. *The general drifts of the German tariff subsequent to the full establishment of the Zollverein.*

Up to 1865 the taxes levied on imports by the Zollverein were generally high, though seldom extravagant. But there then set in a movement towards free trade, stimulated by the continued prosperity of England under her free-trade régime, and the sudden prosperity of France under the relatively liberal tariff which she had adopted in 1860. We have already noted that England's prosperity was partly due to exceptional and transitional causes: and the splendour of France under Napoleon III was partly the result of lavish borrowing. But neither of these facts was noted at the time; and the valid arguments in favour of free trade were exaggerated by Prince-Smith, and the other members of the so-called "English"

fall on his hero of being a follower of Adam Smith, or a friend of England. He says Nebemius even rejoiced at the advances of Russia in Asia, because they were injurious to England, *ib.* p. 965: but he is revolted by List's reckless misrepresentations of Adam Smith and England.

A good account of the Zollverein is given in P. Ashley's *Modern Tariff History*. See also Miss Hirst's *Life of List*; and Eckert, *Zur Vorgeschichte des deutschen Zollvereins* in Schmoller's *Jahrbuch* xxvi., especially p. 101.

¹ Bowring's *Report on the Prussian Commercial League*, 1840. Prussia yielded at every point good bargains to those, who joined her Union; and she put some pressure on those, which remained outside, by charging high transit duties on goods passing through the Union to the sea and elsewhere.

Of course Saxony was very unwilling to come in. But her manufacturers even then wanted a good vent for their hoary; and the King could not resist the money, which would make him independent of his Parliament (Maogregor in evidence before Committee on Import Duties, 1840, Q 368).

APP. F, 2. financial school in Germany. Bismarck also favoured the movement on political grounds; because it would oppose an additional obstacle to the entry of Austria into the Zollverein. The movement was sustained for twelve years: and 1865—1877 may be regarded as a time of relative free trade.

The reaction which began in 1877 was the result of many causes. The crisis of 1873—4 had affected France but slightly; because the inflation, which preceded it, had found her in a chastened spirit: and it struck Germany very hard because her military successes, and the rush of fresh capital, obtained through the war indemnity, had thrown her people off their balance. Business men formed extravagant expectations, discounted them; and then launched into large enterprises and speculations, for which the resources of the country were as yet insufficient. The subsequent depression lasted long: and its burden was exaggerated in appearance by a fall in prices; which was caused partly by the adoption of a gold standard by Germany and some other countries, partly by a check to the yield of the new gold-mines. Thus there was a great "over-production," in the sense that many industries had increased their productive plant to such an extent that their products, while in full work, exceeded the amount which the public would buy, when credit had been shaken, except at prices much below those which had been expected when the plant was set up. Consequently people were willing to listen to suggestions that the home market should be protected in the interests of producers against the incursion of foreign goods. The depression of prices was general: English and other manufacturers were forcing some of their goods at abnormally low prices on the German market: and this intensified the demand for Protective tariffs.

Further, the Imperial revenue was inadequate to the demands on it. To levy increased contributions from the separate States would cause friction; diminish the freedom of the Imperial Government; and be open to the objection that, being assessed in proportion to population, they pressed unfairly on the poorer States. Bismarck was never a convinced free-trader; and he used the discontent of the manufacturing classes as a lever for raising the tariff to as high a level, as was consistent with his dominant aim of obtaining increased revenue. It was not an

extreme, or so-called "prohibitive" tariff: and it was in part "educative"; that is, designed to carry weak industries through their early difficulties in competition with older rivals in England and elsewhere. But it was also largely governed by parliamentary exigencies even at the outset: and, as time went on, these became very powerful. In particular, the leaders of the heavy iron and steel industries made common cause with the leaders of agricultural industries in support of high import duties on metals, and on those kinds of agricultural produce in which large landowners were most interested.

This drift continued long and brought a general increase in nearly all import duties, the chief exceptions being for raw materials. Germany's neighbours followed suit and raised their tariffs also; partly because they were influenced by her example; and partly because, if their trade with her was to be restricted by taxes, they thought it well to secure as large a part as possible of the revenue from those taxes. Thus the policy of commercial agreements, both general and special, became increasingly prominent. The chief of the general agreements was the "most favoured nation clause," whereby each party to a treaty bound itself to give to the other at least as favourable treatment as to any third country: while special clauses were continually abating the severity of certain items of the general tariff. But on the whole its pressure increased till 1891; when Count Caprivi arranged treaties, mostly for ten years, by which great reciprocal concessions were made between Germany and some other European countries. Though there was a bitter tariff war between her and Russia in 1893, her foreign trade in those ten years was rather more free than between 1879 and 1891; but much less free than between 1865 and 1877.

Meanwhile, however, various causes had increased the dependence of the Imperial Government on the political support of the landowners of North-East Prussia: they urged that Germany's food should be grown under the protection of German cannon; and that the population of the agricultural districts, and especially of the military provinces in the north-east, should be induced to stay on the land. In concert with the leaders of the iron and other staple trades, they induced

APP. F, 2. the Reichstag to pass in 1902 a bill providing for an extremely high tarif. Its details were however so arranged that it enriched the great landed proprietors, who raised broad crops of grain largely by aid of Slavonic migrant labourers; but at the same time injured on the balance the small cultivators, who raised very little grain as a rule.

APPENDIX G¹

EARLY INDUSTRIAL CONDITIONS AND FISCAL POLICIES OF THE UNITED STATES

1. *The course of internal and external trade was for long governed mainly by difficulties of communication and by scarcity of capital. But steam traffic opened European markets for wheat, and the people moved to western prairies.* APP. G, 1

The Plantations in America were at first little more than patches on the coast, and in the neighbourhood of a few rivers. Their industries were nominally restricted by the stringent prohibitions of Mercantile statesmen at home to manufacture anything which English manufacturers wished to sell to them. But these prohibitions could not always be enforced: indeed many of them were probably not expected to be. America was not ready for the finer branches of manufacture: but the simpler clothes and utensils used on farms and in the villages could be, and were, made largely in the winter months from native material by local labour. For indeed, when machinery was still simple, nearly everybody even in English villages was an agriculturist during three months in the summer: and in the depth of winter nearly everybody helped to make or repair the rude predecessors of things which the modern farmer buys of the ironmonger, the clothier, or the dealer in boots, harness, or furniture².

¹ This Appendix is associated with I, VIII.

² In 1800 there were in the States but six cities, each containing more than 8000 inhabitants: together they had about 200,000 inhabitants, or a twentieth of the population. In 1900 there were 545 such cities with an aggregate population of about 25,000,000, about a third of the whole population.

The crudity of the economic life of the poorer agriculturists is the starting point of Dr Quantance's *Influence of farm machinery on production and labor*, 1904. He says (p. 2) on the authority of Mr McMaster: "The poor whites of Virginia in 1790 lived in log huts with the chinks stuffed with clay: the

APP. G, 1.

The soil and climate of the Atlantic border were not very favourable to the production of grain, and its transport to Europe was costly; while meat of course could not be exported except in salt. But the forests of New England still supplied the materials for ships, which could more than hold their own against any other of equal size: and it was not by accident that America built the first effective steam-boat. That boat was clear notice that the New World was about to become a teacher of Europe in industry: but in fact preparation for that task had been long in progress.

In the old world a man, who happened to be a little raised above his neighbours, could get them to work for him at low wages: but in America he could not; so he turned his shrewdness to labour-saving inventions. His affairs were generally on a small scale; and his inventions penetrated down to petty domestic difficulties. It is therefore easy to see the humorous side of many "Yankee notions": but the spirit which lay at the back of them was pregnant with great things. It was the spirit of protest against the servitude of free man to dull, heavy work.

Here may be noted a strong contrast between America and Europe which was prophetic of the future. England continued well into the nineteenth century the old practice by which industrial centres had endeavoured to maintain a monopoly of their skill and knowledge; and she prohibited the exportation of machinery and the emigration of skilled artisans: so Europe smuggled in the machinery, and copied it with the aid of imported artisans. America did not disdain to do the same on occasion. But she preferred to find out what was the human task which an English machine had taken over, and to re-invent other machinery for herself; and this in some cases turned out to be better than the English.

walls had no plaster; the windows had no glass; the furniture was such as they had themselves made. Their grain was thrashed by driving horses over it in the open field. When they ground it, they used a rude pestle and mortar: or, placed in the hollow of one stone, they beat it with another." See also Weeden, *Economic and social history of New England*.

Marshall's *Digest*, A.D. 1833, points out that the exports of grain and other agricultural produce from the United States for the twenty years 1806 to 1826 were less than those of Ireland: much went to the West Indies, and was paid for by sugar-bills drawn on London.

Early in last century Jefferson prophesied that the West would not be settled for a thousand years. Few people were as capable of forming as good a judgment on the matter as he was; and that he was so wrong, shows only that he did not anticipate the nature of the forces which were to weld together the East and the West. It is difficult for us to think ourselves back into his world, where those forces were as yet not dreamt of. APP. G, I.

In 1800 there was very little population west of the Alleghanies: but in 1830 the populated area to the west of them was larger than that of the east. People crossed them by rough roads; and, as soon as possible, betook themselves to rude barges on the Ohio and its branches. They came upon fertile land, but their produce could not go back by the way by which they themselves had come: so it was marketed southwards; and for some years the Middle West was bound to the Southern rather than the Eastern States¹.

In 1825 the Erie Canal brought traffic from the great lakes to New York, and other canals were contemplated for uniting the Mississippi valley with the Atlantic. But at that very time the "application of steam to the navigation of the land," as Cobden said, was bringing to bear that great economic force which was to make Jefferson's prophecy appear foolish: there were 3000 miles of railways in 1840, and 30,000 in 1860.

Meanwhile the Irish famine, the European ferment of 1846—8, and the fame of the abundant rich land and the high wages to be had in the United States, had swollen the tide of immigration; and the repeal of the English corn-laws had opened the prospects of a large foreign market for wheat. The more enterprising agriculturists moved westwards, leaving farms in the east to be had by immigrants almost for nothing: they themselves sought the richer land of the Mississippi valley, where the soil would yield almost continuous wheat crops, when indulged by occasional fallows. This was the first of those great movements of the more adventurous part of the population, which

¹ As Prof. Emery points out, the Middle West might perhaps have sided with the South in the great Civil War, if that had taken place before 1850 (*Cambridge Modern History*, vol. VII p. 695). In early times the American's sense of patriotism was mainly directed towards his own State.

APP. G, 2. caused them to multiply more rapidly than their fellows; and in this and other ways endowed the nation with enduring vigour and growth. The ranchman indeed has marched ahead of the wheat farmer; but the large areas, over which his cattle roam, have found occupation for only a few men, and very few of these have had homes of their own. To the wheat farmer, on the other hand, "the acquisition of the home, not the market, has been the primary impelling force¹."

The mere wheat farmer does not require, nor even find much use for that technical knowledge which is almost essential to mixed farming². The experience of his immediate neighbours, who know the ways of the soil and the climate, is generally a better guide than traditions brought from the old world. He is called on only to be brave, alert, and willing to work hard for a deferred reward. Without these qualities he is not fit to be a pioneer: with them, he has a fairly secure prospect of leaving behind him a well-to-do family strong in mind and body.

2. *Protective tariffs in favour of American manufactures were originally advocated as an investment of national capital in national education, which would bring rich returns in the future.*

The early fiscal policy of the country was intimately connected with her early industrial structure: the present brief account of it was originally intended to accompany a study of present fiscal policies: but it is kept in this place for reasons explained above (p. 12).

The keynote of the claim of early American protectionists was set definitely in 1789 by Hamilton's often quoted argument:—"Though it were true that the immediate and certain effect of regulations controlling the competition of foreign with domestic fabrics was an increase of price, it is universally true that the contrary is the ultimate effect of every successful manufacture.

¹ See Mr Powers' weighty testimony in the *Report of the Industrial Commission*, vol. X. p. 180.

² Nearly the same may be said of "corn" (i.e. maize); which is the pioneer crop for some soils and climates. It is favoured by the negro population: and is now the heaviest grain crop in the States, but its influence on economic development has been much less than that of wheat.

When a domestic manufacture has attained to perfection, and has engaged in the prosecution of it a competent number of persons, it invariably becomes cheaper. Being free from the heavy charges which attend the importation of foreign commodities, it can be afforded cheaper, in process of time, than was the foreign article for which it is the substitute. The internal competition which takes place soon does away with everything like monopoly, and by degrees reduces the price of the article to the minimum of a reasonable profit on the capital employed." APP. G, 2.

Here, as in *The Wealth of Nations*, stress is laid on the force of acquired skill and high organization, rather than on that of large capitals. And it is to be remembered that that lack of acquired skill, for which Hamilton demanded an artificial remedy, was itself in large measure an artificial product of selfish Mercantilist Protectionism by the English Government in the days of its power. But yet his argument was not to bear much fruit till a new quarrel had arisen between England and her old colonies¹.

For up to about 1807 America's rapidly growing mercantile marine was earning very high freights in the carrying trade; and she had eager markets at high prices for food in the West Indies, and for food and timber and other requisites of war in Europe. This gave her merchants a great command over European goods, in which English textiles took a large place. English cloth was indeed not able to pursue triumphantly rough cloth woven from home-made yarn into its crevices in the industrial system: but it met American factory-made cloth on nearly equal terms in open market, and could beat it there. During all this time the maritime provinces were more interested in trade than in manufactures, and their political influence went mainly, with that of the South, in favour of free trade.

But in 1807 commercial quarrels in Europe had begun to stretch across the Atlantic; and in 1812 there was again war between England and her old colony. From 1807 to 1815 English goods were excluded from American markets more

¹ Considerable progress had however already been achieved by simple industries even under that hard rule: and the list of the industries described by Prof. Dewey, *Financial History of the United States*, pp. 77—8 as existing in 1789 is large and various.

APP. G, 2. thoroughly than they would have been by a very high Protective tariff. Capital and enterprise, driven from the sea, turned to home industries, and expensive plant increased apace. New England, whose industries had been overshadowed by her commercial and shipping interests, swung round through a neutral attitude to one of gradually increasing eagerness for fiscal legislation on Hamilton's lines. In 1816 the first systematically Protective tariff in favour of manufactures was adopted¹.

The tariff was raised in 1820 and in 1824: while in 1828 a strange political combination led to one so extreme and so ill devised as to cause a reaction. In particular the South was offended by it: and in 1833 it was displaced by a tariff, which went very far in the direction of free trade. That was followed by remarkable prosperity, which however led to over-confidence and a severe crisis in 1837².

On the whole the evidence seems to show that until about 1825 there was much public spirit, and comparatively little sordid self-interest, in the forces that sustained Protection to native industry. The reason for this was that the people engaged in manufacturing industries, of such a nature as to benefit from Protective duties, were as yet not very numerous; and they had not great weight at the polls: so that politicians, as well as others, were able to regard tariff questions from the point of view of public well-being rather than of particular private interests³.

¹ There voted for it 17 Representatives from New England, and 23 from the South and South-west: while 10 from New England and 34 from the South and South-west voted against it. The middle and western States gave 48 votes for it, and 10 votes against it. See Dewey, *l.c.* p. 163.

² The clumsy "tariff of abominations" of 1828, was suspected of being partly the work of people who wanted to make Protection odious. The "compromise tariff" of 1833 was suggested by Henry Clay, who was to become the leading parliamentary advocate of Protection, but thought it was necessary to appease the spirit shown in South Carolina's "nullification ordinance" by which she declared the tariff of 1828 to be "null and void." See Dewey, *l.c.* ch. viii.

³ Some exceptions to this general statement will be found in Sumner's *Protection in the U.S.* Many interesting details as to the conditions of industry from contemporary Americans are given in Taussig's *Tariff History*; and others by American witnesses are to be found in the British Official Reports of the time. It is clear that in textile work the Americans were hampered mainly by the high price of machinery, and the high rate of interest which they had to pay on loans: they economized machinery and labour by using rather better cotton, than was

The half century, of which 1833 is the middle point, is the chief battle-ground for advocates and opponents of "educative" tariffs designed to protect nascent industries: such Protection being claimed on the ground that they are required, (a) in the interests of military and political security, or (b) in the interests of variety of social life and industrial opportunities, or (c) because they have so great undeveloped economies of production on a large scale, that sacrifices incurred for their education will be returned with abundant surplus to future generations. Both sides appeal to the evidence of facts, and especially statistical facts. But the facts are too complex, and the interweaving of the results of different causes is too intricate for such a treatment; and therefore each side has been able to find in the facts that conclusion which it desired.

Looking away from details to broad considerations, we can see that Protective tariffs increased the manufacturing population relatively to the agricultural; and thus developed centres of complex and various social life and high culture, and provided an ever-widening choice of occupations for people of varying temperaments and capacities: but at the same time they hindered the development of the agricultural resources of the country. This involved some retardation of the growth of commercial centres; which are nearly, though not quite, as important from the social point of view as the industrial centres. So far there appeared a valid, but not a strong, ground for intervention by the State in favour of nascent manufactures, under the particular circumstances of time and place. And, of course, another *prima facie* valid ground lay in the fact that

used in England even for those rough goods, which alone they attempted to make. The labour in the New England mills was intellectually of the highest class that has ever given itself on a large scale to such routine work; it appears to have been more efficient than the English in all matters needing merely promptitude, energy, and general intelligence; though inferior in manual training: it was paid well, but not very highly paid in proportion to its efficiency. The English Committee on Manufactures of 1833 was told that self-acting mules were avoided because "labour is cheap and machinery dear" (Q. 2651); also that the Americans chiefly used home-made machinery, especially for the coarser kinds of goods. Large use was made of wood, because iron was dear; and American contrivance had already enabled each operative to control several looms for the simpler kinds of work. A Connecticut manufacturer said to them, "In making fine yarn we lay aside all our advantages, and have to take up all our disadvantages" (see Q. 640, 2649—50, 2678—9).

APP. G, 2. many, though not nearly all, manufactures had great latent powers of economy through production on a large scale; and that those who pioneered the way had a *prima facie* claim to public aid in the public interest. But unfortunately such aid, when given in the form of Protective duties, is seldom free from serious indirect evils, economic, political and moral, which cannot be discussed here. A little may however be said as to some peculiar features of the American controversy in the middle of the nineteenth century.

The advocates of Protection to manufactures were able to argue that the main source of America's wealth lies in her great expanse of rich agricultural land very much more even than in her mineral resources: that the farmers had been allowed to appropriate that land; and that therefore there was no injustice in compelling them to contribute to the building up of progressive industries, which would enrich them, or at all events those who inherited their properties. This end, if desirable, might perhaps have been better attained by other means than those which were advocated by the manufacturing interests: but their argument was not without force. The agriculturists could however reply that they, or their predecessors in title, had only availed themselves of opportunities for hard, if not hazardous, ventures, which were open to every one: that no exclusive favour had been granted to them after they had once committed themselves to their tasks; and that therefore they were not in a similar position to manufacturers who asked for favours, which their predecessors in title had protested were not to be expected after the first difficulties had been overcome. "No one," said Clay in 1840, "in the commencement of the protective policy ever supposed that it was to be perpetual. We hoped and believed that temporary protection extended to our import manufactures would bring them up and enable them to withstand competition with those of Europe." And in 1860, when the tariff was again raised after some fluctuations, very little was heard about the need of educating young industries.

3. *Subsequently more stress was laid on instances of* APP. G, 3
malign underselling by British manufacturers. Statistical
evidence as to the influence of high tariffs on national pros-
perity is necessarily inconclusive.

By 1860 the most prominent manufactures had emerged from their infancy; and obtained increased voting power at the polls by that very increase in their strength which lessened their moral claims to the support of the patriotic citizen. Politicians therefore had a strong motive for attracting the votes of those interested in manufactures, and especially those which could not claim the protection due to the weakness of infancy without provoking the amusement and the anger of the general public. Consequently they were compelled to fall back on arguments, which had no special connection with the peculiar conditions of the rapid development of a Continent by an alert western nation: and these they found in exaggerations of the harm caused by the occasional descent of some British manufacturers to the hateful practice of selling below full cost in America in order to crush rivals less amply provided with capital.

Adam Smith protested against those Mercantilist practices, by which each nation strove to flourish through the misfortunes of others: and his chief successors held high the banner of international comity which he had raised. The common man is indeed apt to justify modes of conduct by his own country to others, which he would condemn as mean or oppressive in the relations of private life; and English manufacturers and statesmen have been ready to boast of the commercial injury which their policy would inflict upon other nations. But this temper brings its own penalty in the life of nations, even more surely than in the life of individuals. And amidst the new commercial problems which England is required to face at the present time, attention may be called to the fact that the high Protectionist policy of America, from which England has been a chief sufferer, was largely due to the sedulous spreading among the American people of stories as to her own ungenerous dealings, which had unfortunately some solid foundation.

For instance great stress was laid by protectionist writers on the alleged fact that "upon the adoption of the first tariff law in the United States in 1792, the merchants of Manchester

APP G, 3. contributed \$250,000 to be invested in goods, to be sold in the markets of the United States at low prices, or to be given away if necessary, in order to discourage the investment of capital in manufacturing."

Again List quotes from an American official Report Brougham's saying in 1815 that "it is worth while to incur a loss on the exportation of English manufactures in order to stifle in the cradle foreign manufactures." And an American witness told an English Committee in 1833, that the English cotton manufacturers sent goods, that were a little out of fashion, to America to be sold for what they would fetch; "preferring to do it where it would do the most mischief to their competitors" and "with a view to breaking up the system of manufacturing in America¹."

Perhaps the most frequently quoted statement is one taken from the Report of the Committee on the state of industry in the mining districts in 1854. In England it never attracted much notice and was speedily forgotten: but in earlier decades almost every American had it brought to his notice. It begins: "The labouring classes generally in the manufacturing districts of this country, and especially in the iron and coal districts, are very little aware of the extent, to which they are often indebted for being employed at all, to the immense losses which their employers voluntarily incur in bad times in order to destroy foreign competition, and to gain and keep possession of foreign markets. The great capitals of this country are the great instruments of warfare against the competing capital of foreign countries, and are the most essential instruments now remaining by which our manufacturing supremacy can be maintained."

It is probable that the injury done to American manufactures by all these paltry processes of international warfare was small; and certainly less than that which has been worked in America and elsewhere by manufacturers and traders who sell below cost price in their own country, not under the goad of necessity, but with the deliberate intention of supplanting a

¹ List, *National System*, p. 87, and *Report of Committee on Manufactures of 1833*, Q. 845—854. See also Carey, *Social Science*, I. pp. 289—291; and Curtiss, *Protection and prosperity*, p. 408.

neighbour. Such as it was, however, the injury roused a patriotic indignation, and was systematically exploited for the furtherance of their own ends, alike by interested manufacturers and by disinterested advocates of a Protective policy¹. APP. G, 3

Statistical evidence relating to our own times is apt to be distorted by personal bias, of which neither party to current controversy is willing to acquit the other. There may be therefore some advantage in attempting to gauge the difficulties of interpreting such evidence by reference to a notable controversy of past times. Now as then statements as to sales of imports below cost, with the malign purpose of ruining home manufactures, were commonly based on particular cases: but statistical evidence was brought to show that Protection raised national prosperity in general.

A chief difficulty arose from lack of agreement as to the length of time which elapsed between a tariff change and the full development of any of its good or evil results. For the time to be allowed would vary with the nature of the product, and also with the character of the good or evil result under discussion; and each case needed to be treated on its own merits: but on this point no agreement was reached, or even systematically sought. And since tariff changes followed one another at intervals shorter than might reasonably be claimed for the full development of their results, advocates of free trade were apt to think that advocates of Protection attributed a benefit to a high tariff, which should more properly be put to the credit of a low tariff which preceded or which followed it: and *vice versa*.

¹ Much stress was laid on this class of facts in Thomson's *National Economy* (see especially p. 285). It was based on Carey's work, and was the chief textbook of American Protectionists several decades ago.

Inquiries made in America in 1875 convinced me that the relatively few cases of such practices as had occurred in an earlier generation, had had some considerable influence in checking new industrial experiments, through the effect which they exercised on the imagination. For those who were contemplating a bold venture often knew their own stocks of capital to be small, and had formed exaggerated notions of the amount of English capital ready to be devoted to underselling them. In Ontario at that time the rising manufactures were still weak technically and were poorly supplied with capital: so it seemed clear that there was real cause to dread the hostile selling of American goods at special export prices. But there was no evidence that the well established and rich industries of the United States had then any great cause for fear in this matter

APP. G, 3. Again the tariff did not affect directly more than a small fraction of the industry of the country; and, while its results for good or evil were being developed, other changes often occurred, which modified the bases of national prosperity. Such changes were the growth of the European demand for American produce; which was in some measure dependent on changes in European tariffs, and even more on the development of improved means of transport by land and water, at home and abroad. Again changes in currency and credit altered temporarily or permanently the real value of the money unit in which prosperity was measured; and so on. Disputants on either side were apt sometimes partially to ignore these disturbing causes, and sometimes to attach to them vast importance. How could the questions thus at issue be decided? The most refined and elaborate analysis, the most patient and intimate study of details were needed as a preparation for the task: and though it may be over bold to say that the task can never be performed, it is certain that no one has claimed to perform it, who has realized any considerable part of its difficulty. For the present, though probably not for ever, it is true that in this matter "the inductive or historical method absolutely fails us¹."

¹ This is the conclusion of Prof. Taussig's profound study (*Tariff History of the United States*, p. 122) in regard to the period in view. He continues the argument on similar lines down to recent times: but the issues raised then are not appropriate to the present volume.

It may be noted that Carey's *Social Science* and Grosvenor's *Does Protection Protect?*, basing themselves on almost identical statements of fact, applied them, the one to prove that nothing but good had ever resulted from a high tariff and nothing but evil from a low tariff; and the other to prove the exact opposite. I endeavoured on my return from America in 1875 to form an independent opinion by tracing in a book (each page of which contained a hundred horizontal lines, one for each year of the nineteenth century) curves showing all the available and relevant statistics for the United States and other countries; grouping each class on a separate page, and writing across the page brief statements of relevant events which were not in statistical form. That plan led me to the conclusion that each party to the controversy unconsciously stretched or compressed, so as to suit his case, the length of time which he supposed to elapse between a particular tariff charge and its chief results. But in this matter, as well as in the neglect of important causes relevant to the issues under discussion, the laxity seemed greater on the Protectionist than on the Free-trade side.

APPENDIX H

TECHNICAL INFLUENCES ON AGGREGATION IN PARTICULAR INDUSTRIES¹

1. *Influences of way-leaves: railways; petroleum wells; water and gas supply and postal industries. The mining industry.* APP. H, 1.

High roads have often been broken up into short divisions, each under a separate management; and bridges, which are vital links in them, have been private property. But in every case public authority has regulated the tolls which might be levied: for otherwise tolls at any one link might be so heavy as to choke through traffic, and thus in effect to be taxes on all the neighbouring links.

Railways were originally designed as high roads: anyone was to be free to run a train in return for fixed tolls. But as the trains became faster and more numerous, and long distance traffic became more common, each company needed to have exclusive control of its own traffic; and ere long consecutive links were welded into a compact unit, with through trains and an organized time table for them. Such fusions increased the services which the railways could render to the public, and were generally welcomed. They were not open to the objections, raised against a combination between parallel lines, that they created powerful monopolies: and indeed, by supplying new alternative routes between distant industrial centres, they often introduced effective competition as regards services, if not as regards charges, where it was much needed in the public interests. So the main lines have gone from strength to strength: they have increased in length, and their feeders have

¹ This Appendix is associated with the second and third chapters of Book II. Its introductory remarks as to railways refer briefly to matters discussed more fully in Book III.

APP. B, 1. multiplied. The consolidation of railways has proceeded almost without interruption in nearly every country of the world, in which they are not all in the hands of Government; and the power of a great railway to starve out small independent railways within its domain has often proved irresistible, in spite of legislative efforts against it.

The plant of great railways may of course become obsolete, and need to be changed. But (it being assumed that the aerial traffic will not supersede that on the surface of the earth) their position as landowners will ever increase in strength; and will, as a rule, be the stronger the longer their strips of land, and the more numerous the industrial centres which they connect. Improvements in the construction of ordinary roads may indeed enable nearly all detailed trade, and personal traffic over moderate distances, to pass in motor cars on public highways; but the hold of railways on long distance heavy, but rapid, carriage of goods and passengers seems not to be threatened.

A petroleum well has much in common with the shaft of a mine: but when access to the surface is once provided, the oil generally rises to the surface automatically under the pressure of its own beds: and in many places the industry of crude petroleum is a transport industry, dependent in great part on long pipe lines. These need large way-leaves; and thus resemble in many respects the pipes and wires along which water, gas and electricity travel in that large group of undertakings which are often described as practically "indivisible"; because a breach in continuity of transport would be very wasteful.

The way-rights of this group of industries are essential to them, and make large use of public property. Therefore they have attracted the attention of Local Authorities; and are beginning to claim that of Central Governments. For instance, the bringing of water supply from Wales or the English Lake District to large cities in remote counties is apt to raise conflicts of interest among the various localities affected; and thus to give rise to large national problems. Similar conflicts have arisen in regard to municipal tramways, when they shoot

out feeders into districts under the control of several Local Authorities. But the ever enlarging enterprise of motor traffic on public roads is throwing such controversies into the shade: for it has concentrated the searchlights of public inquiry on the suggestion that the provision of a system of main roads, open freely to all, and extending over the whole country, must be regarded as a single transport business, so immense that the nation as a whole is alone fully qualified to undertake it. APP. B, 1

Somewhat similar remarks are applicable to the great transport and communication industries of the Post Office, Telegraph and Telephone. The most costly business of all, that of national defence, is of necessity unified, so far at least, that its strategy can be treated as a whole: and it is to be noted that strategy involves mobilization, that is transport and communication: and railways themselves, if not owned by Government, are necessarily taken under its control in war time.

The command of all convenient routes of access to the shore, where it offers sites for deep-water berths, might be a source of great monopolistic power, were not the charges of docks controlled by public authority. Again owners of land surrounding a rich mine might charge way-leaves, which would absorb nearly the whole net profits of the mine, if the law had not provided against it.

Although mining is commonly classed as a "productive" industry, yet, since the plant of a large mine is little more than a long series of narrow railways through long tunnels, with a few shafts for vertical traffic, it is in fact very much of a transport industry; and unbroken continuity from the face of the working to the top of the shaft is essential to it. This may be a small matter if the rich veins lie near to the surface; and in such a case, a small mine can hold its own against a large one, provided it works for local consumption, and can be well financed locally. The main causes of the general increase in the size of mining concerns in old countries are, that the veins near the surface are becoming exhausted: and that improved and cheaper apparatus for hoisting, together with increased value of the product, causes shafts to be sunk very deep; and deep shafts cannot pay their way without long lines of railway underground.

APP. B, 2.

2. *Electricity in the service of man.*

It is well known that the business of the military strategist is to bring fighting power to bear promptly and decisively on each critical issue as it arises: electricity enables energy to be brought to bear instantly where and when needed, not indeed without some limitations, but in general much more easily and efficiently than can be done by any other means; and this over both large distances and small. The expense of a copper cable of sufficient diameter to carry a large volume of electricity without much waste over long distances is indeed heavy. But there are already many cases in which electricity generated by water power, by the waste gases of furnaces, and by burning inferior coal at the pit's mouth, is used to light far off cities and to work railways, factories, etc. at a distance. Rand mines receive power brought from several rather distant waterfalls: and it has even been suggested that Alpine streams in summer, and Rhine-Westphalian coal in winter (when most of the Alpine streams are frozen) will supply electricity for a good deal of western Germany. The economic value of great waterfalls is indeed apt to be exaggerated, especially when little account is taken of the seasonal variations in their volume: but there is reason to believe that small streams, descending from great heights, may ultimately be an important source of energy available for domestic and industrial uses. Something may also be expected from the co-ordinated use of multitudes of small inexpensive windmills; and perhaps even from the rise and fall of the sea, provided that good and cheap means of storing electricity can be discovered¹.

The economy of powerful generating engines is of course within the range of the large manufacturer; and at first it seemed probable that the small manufacturer would have to pay a good deal more for the energy, which he bought from a central supply company, than it cost to his more powerful rival.

¹ The rise and fall of the tides cannot be utilized without disproportionate expense, save under very exceptional conditions. On the other hand (as has been observed above, p. 162) the sun's heat may conceivably be turned to account so effectively as greatly to raise the economic strength of the tropical zones relatively to the temperate zones; provided a supply of water, or some other cooling agent, is accessible.

But in fact a municipality or private company, which supplies a considerable district with electricity, can produce it more cheaply than almost any other undertaking can (the chief exceptions being found where electricity can be obtained by turning to account the heat of waste gases); and it can supply energy with greater steadfastness and uniformity than anyone else can. It can produce cheaply because its numerous customers are likely to spread their aggregate demand for *power* not very unevenly over nearly twelve hours of the day: and therefore the maximum load for which the central supply has to make provision is much less than the aggregate of the maximum loads for which provision would need to be made by the individual consumers independently. Also it can supply a steady driving force; because the draft, made on its strength by the sudden starting of one of the heavy machines driven by it, is practically negligible in proportion to the total energy which it is producing; while the same cannot be said of the private electrical supply even of a very large factory. This steadiness of work is especially important in regard to looms and other machines which need to be started smoothly at the same pace as that of their normal working: and the small textile manufacturer, who buys his electricity, can use a separate motor for each machine more safely than can almost any rival who makes his own electricity.

It has recently been proposed by responsible persons to link up the whole country through central power stations placed at the most economical points and near coal. By this means it is claimed that fifty million tons of coal annually would be saved; and also a great part of the present immense cost of transporting coal large distances. There seems good reason to hope that some tentative steps will soon be taken in this direction.

On the whole then it may be concluded that the advance of the electrical industries will help the small factory in competition with the large factory, and the workshop in competition with the factory, etc. The cheapness, handiness, and versatility of the implements, to which electricity can be supplied, may sometimes aid the poor man to make experiments at his own risk; and it may thus contribute to the maintenance of strong, independent,

APP. B, 3. individual character. In this it will cooperate with or perhaps supersede oil and gas engines, which are now its rivals in many uses. The importance of electricity in connection with past and probable future developments of the technique and ownership of transport agencies and other businesses belongs to other parts of our study.

3: - *The expansion of the carrying capacity of ships, and of the business unit in the shipping industry.*

The services which water has rendered to industry and trade always have been so general as to be inconspicuous; and therefore apt to be underrated. But water power was the first to raise hopes that mankind might be eased from severe toil by the benignant help of Nature¹. Water power inaugurated the modern era; in which man directs while Nature does nearly all the hard work, and in consequence massive production has marched from victory to victory. No heavy commerce could be carried over long distances even a hundred years ago, except by water; and in some parts of the world wells are, even now, the most important forms of fixed plant. Water has ever been an absolute necessary to all, and has opened out large opportunities for the wealthy.

Ships have always been the largest things that have moved under man's control, for the same reason that the largest animals find their home in the seas. Nature's forces were first harnessed to the work when a boat was set to run before the wind, while man sat in the stern to steer with a pole. Sails were developed, and set to tack against the wind: ships increased in size and speed; and man no longer used his own muscles, even when aided by a windlass, to control the massive rudder. He

¹ As to the hopes raised by water power, Karl Marx quotes Antiparos, a Greek poet, whose elegiacs may be rendered thus:

"Spare now your weary limbs, ye women that work at the hand-mill;
Spare them, and sleep while the cock crows to awake you in vain.
For the good water-nymphs have undertaken your labour,
And they hop lightly along over the spokes of the wheel:
So that the great thing turns on its axle, ceaselessly groaning,
Making the vast mill-stones grind out the nourishing corn.
Let us then live the light lives of our fathers, and resting from labour,
Gladly enjoy the rich gifts granted by bounteous Gods."

harnessed steam power in that work also, calling electricity to his aid for its easy transmission; and now he merely moves an easy handle, which directs the power to direct the rudder, to direct the course of a ship that carries the population of a good sized town with all their effects across the Atlantic in five or six days. For, when once a ship has become so large that almost every part of its equipment is too heavy to be moved by hand, every further increase of size must bring economies with it. A navigating officer can direct the course of a big ship as easily as of a small one. An increase in the size of winches and cranes driven by steam and electricity adds nothing to the difficulty, and not very much to the responsibility, of turning the handles which set them in motion. APP. E, 3.

Meanwhile the improved organization of appliances for lifting heavy masses, and sucking up grain in bulk from the hold of the ship to warehouses or railway trucks, enables the largest ship to discharge its old cargo, take a new one and depart in less than a quarter of the time that was required by a small ship fifty years ago. Therefore large ports which accommodate very big ships, and can supply a continuous large stream of passengers, or goods, or both, have an ever increasing advantage over smaller ports: and so on.

This tendency is of course most marked in regard to long distance traffic. Coasting vessels and those which trade in the narrow seas will long continue to frequent small and shallow harbours: coal is still carried most cheaply to some English villages by vessels which "jump upon the sands," very much as their Dutch prototypes did many centuries ago; and the long threatened extinction of "tramp" traders by the competition of the subsidiary cargo ships of the large lines, is constantly being deferred by the opening out of new trades for the cheaply built, versatile tramp of moderate size. But, while the average size of the vessels that enter the Eastern ports of England and Scotland is likely to continue to be rather small, it seems probable that the chief trade across the Atlantic, and between it and the Pacific will be carried in very large ships. A few passenger ships will be very fast; but, as coal and oil become dearer, very large cargo ships will make long voyages with a consumption of fuel for each thousand tons of cargo very

APP. B, 3. much below that which is customary now. So long as coal remains cheap, a slight economy in its use per ton of freight carried at a given pace seems to be practically of less importance than the numerous advantages which a ship of moderate size has over a large one in making up its cargo. Nevertheless the expansion of the shipping unit has had an important influence on the size of the business unit in the shipping industry, as is indicated in Book III, Chapter III.

However great had been the commercial demand for very large ships, it could not have been satisfied until not only the scientific construction of the girder bridge, of which the large ship is a noble example, had made great progress; but also the methods and plant of the steel industries had reached a very high development: larger still are the demands which the great navies make on that industry¹.

¹ The manufacture of a huge armour plate needs the concurrent efforts of several of the most powerful fixed machines; and all independent movements must be intrusted to locomotives. A chief task of the most costly cranes, is to handle naval cannon; and the armour of a big ship weighs several times as much as all its cannon, though it carries twelve of the largest size: the ship, in which Columbus discovered America, could not bear a cargo whose total weight equalled that of one of them, together with its mountings, etc.

APPENDIX I

NOTES ON THE DEVELOPMENT OF BROAD MARKETS FOR GRAIN AND OTHER CRUDE PRODUCTS¹

1. *The catastrophic condition of food supply in early times and its gradual improvement.* APP. I, 1.

This Appendix supplements the account of wheat exchanges in II, v, first by developing Maitland's great dictum that "agrarian history becomes the more catastrophic, the further we trace it backwards"; and secondly by a few remarks on recent movements towards the organization of markets for cotton and some other crude products.

There have been vast improvements, mechanical, chemical, and biological in the arts of agriculture: but grain is raised, and its flour is prepared for food and consumed on essentially the same plans now as in the time of the Pharaohs; though the processes of milling, and the methods of the marketing of grain, belong in the main to the age of steam and electricity. In fact a modern wheat market is as representative of modern ideas, as the wheat field and the loaf of bread are of the unchanging elements in human life. Further, so closely has man's progress depended on the supply of his "daily bread," that the history of the economic well-being of the great bulk of mankind has been commonly taken to be almost convertible with the history of the ordinary family income, expressed in terms of the staple grain of the country. No other economic records are so continuous and definite as those connected with the prices of staple grains; and the history of countries with a fairly dense population shows no instance, until recent times, in which the incomes of the great mass of the people exceeded very greatly the price of the grain needed for their sustenance.

¹ This Appendix is associated with the fifth chapter of Book II

APP 1, 1. For this reason, records of the price of grain, in normal and in abnormal years, afford the best simple measure for comparisons of the real purchasing power of money over many centuries; as is to be argued in a complementary Volume to the present. But, while the average value of grain in terms of human life has been fairly stationary over the centuries, its price has often varied greatly between neighbouring districts at the same time: and it has fluctuated violently from one year to another, in all those ages and places in which the marketing of grain over long distances was impracticable.

These exceptional features of the value of grain were probably always recognized more or less by thoughtful people. But they were first clearly set out about a hundred years ago, when Tooke convinced the Commission on the Depression of Agriculture, 1821, that an exceptional "principle" applies to staple grain; because a fall in its price cannot generally increase its consumption as human food; and, when it becomes dear, people will still buy enough of it to keep them alive so long as they have any means of purchase: in modern phraseology the demand for it is exceptionally inelastic¹.

Under the rule of Rome the ports of the Mediterranean were united into a coherent market of wheat, and were connected with a network of good roads. But during the greater part of history, few places, that were not near to great waters, could draw any considerable supply from distant lands, to meet their urgent demand when faced by a continued deficiency of their harvests.

Gradually traffic by land and sea became easier and less perilous, while local monopolies were weakened by a growth of movable capital; and consequently the irregularities in prices from place to place gradually diminished. England has been less severely and less frequently devastated by wars than other

¹ The Report, drafted by Huskisson, quoted Tooke's statement (see Tooke and Newmarch, *History of Prices*, vol. v. p. 69). It is of course true that when wheat is scarce, inferior grains, potatoes, etc., may be taken from livestock and used as human food; but Tooke had collected evidence, which has been enlarged recently, that an exceptional cheapness of wheat does not cause the well-to-do working classes to eat more bread; though some wheat is lost through negligent treatment on the farm and in the kitchen and some is fed to cattle, and some stands over for future consumption. It appears that the present large consumption of wheat in the United States is due to similar causes.

European countries: almost all of her territory has been reached by imported grain, without the need of any long land journey; and the central authority has been able to overrule the desires of Provincial Governments to set up barriers against their neighbours. It might therefore be expected that her history of grain prices would be less catastrophic than that of other European countries: and this appears to have been the case. But strange variations are occasionally recorded even as regards English prices. Thus Macpherson tells us that in 1288 the price of wheat was five times as high in London as in the North and West of England: and in nearly all the years, in the period 1259—1400 for which Rogers has more than a few entries of wheat prices, his highest is at least twice as great as his lowest; while in many it is three times as great. The intensity of these local variations diminished irregularly on the way through the centuries: and so did the fluctuations from year to year; at all events when exceptions are made for times of civil war and unrule, and for currency disturbances¹.

Similar results have been collected for France by d'Avenel from a very broad and fairly homogeneous basis. Her movement towards steady conditions was broken by internal wars, religious and other; and by foreign wars, especially those of Louis XIV, and the exhaustion which followed them: but in the main it was on the same lines as those of the English movement².

¹ Rogers' results are smoothened, perhaps unduly, by his rule to omit, as possibly erroneous, all extreme quotations; and by his obtaining the greater part of his data from Monasteries, Colleges and other great corporations, which bought generally wholesale, and often from great distances: some of them even brought their wheat habitually by sea and river from remote parts of the country (*History*, iv. p. 213). His practice of assuming that all payments were measured in weight may have overrated some local variations and underrated others: and wages, when paid in silver at all, were sure to be reckoned by tale; and therefore he seems likely to have overrated the purchasing power of wages generally. Internal trade in grain was permitted only to licensed dealers during the greater part of English history. In 1663 it was permitted to everyone so long as the price of corn did not exceed 48s. The main outlines of these movements of law and opinion are shown clearly in the chronological tables inserted in Walford's *Famines of the World*.

² France lacked the advantage possessed by England of being able to draw grain by water carriage from distant places nearly up to distressed districts: and her records often show the highest local price to be ten times as great as the lowest for the same year. But d'Avenel, *Histoire économique de la propriété... et des prix* 1200—1800, boldly undertakes to reduce the silver content of coins, and

APP. I, 1.

Let us turn from the West to the East. Indian records extending back into the eighteenth century show violent fluctuations of prices even in great central markets, such as Delhi: they show much more violent changes in secondary markets; while, in places remote from any metalled road, their movement upwards was limited only by the price of a man's life, after a series of bad harvests; and by the value of the grain as fuel, after a series of good harvests. Gradually the local unevennesses were smoothed out by the making of metalled roads and railways. Thus Sir Theodore Morison tells us that in the eighteenth century, and even later, a village of Northern India, which did not lie on its one great metalled road, and had no share in its scanty water communication, was in effect isolated: there was but slender accommodation in shallow grain pits for the surplusses of successive good harvests: and after bad harvests when those pits were exhausted, there was practically no further reserve on which to draw: so the price of the village went its own way, with but little reference to the prices even of the neighbouring country. But now "the whole of Northern India is practically one market for food grains, and the price of wheat in a district in which the crops have failed is the same, with but a very small addition for the cost of carriage, as the price in a district which had a bumper harvest." In regard to India generally he concludes that before 1850 prices fluctuated violently, and fluctuated in different localities independently. After 1860 they were comparatively stable, and fluctuated simultaneously¹.

the varying measures of grain, to modern units. His diagram, representing mean prices for the years 1200—1890, is a document of surpassing instruction. All that can be done here is to select almost at random a few groups of the prices, which he records (reduced to francs, or their equivalents in silver, per hectolitre) for different places. In 1180 they varied from 0 87 to 16 60; in 1250 from 2 60 to 31 00; in 1313 from 8 37 to 36 00; in 1315 from 2 47 to 28 63; in 1464 from 0 56 to 7 85. The years about 1420 were exceptionally disturbed by local famines and shiftings of currency: and (neglecting entries marked as doubtful), we find 2 82 and 61 80 in 1419; 12 07 and 79 03, both for Paris, in 1421, a year in which Straasburg shows 3 68: while Albi shows 152 22 in 1422 and 14 64 in 1423, a year in which Straasburg shows 2 72.

¹ *Indian Industrial Organisation*, pp. 172, 216, 305. He quotes the following inverted prices into the rupee for a chief grain (Gram) in Lower Bengal: 1714, 130; 1774, 16; 1751, 70; 1752, 20; 1756, 59; 1769, 15; 1790, 90; 1792, 36; 1794, 82. (*Ib.* p. 293.) Variations of inverted prices are of course

We are thus brought to consider, from a different point of view, those characteristics of custom, which have already (II, II, 1) been noted in relation to the development of technique. There is a sense in which it is true that custom dominates early forms of civilization; for in them status and methods of work, utensils and implements are all ruled by custom: and, though even in such matters, custom is found on investigation to be much more plastic than it appears to those who live under its sway; yet conscious, deliberate, direct breaches of custom were undoubtedly very rare. Wages also were in large measure governed by custom; though they varied greatly between neighbouring localities under influences, which cannot now be traced. Of course they often consisted largely of board or allowances: these, not being rigidly defined, had large scope for fluctuation in times of scarcity: and, then as now, harvest wages varied more than others in accordance with passing circumstances.

Thus, even in these relations of life in which custom appeared to hold sway, its authority was temporarily overthrown by the near approach of famine: and it was undermined, when the population of any locality had so far outgrown the means of subsistence that some emigration was almost compulsory; or, on the other hand, had been decimated by plague or flood or any other calamity. There seems to be no evidence that it ever had any sway at all over the market prices of harvest products or of cattle: and dealings in these were far more important than any other among primitive agricultural peoples¹.

variations in the amount of a thing that can be bought for a rupee, or other uniform payment.

The following peaks and depressions of inverted prices for the period 1763—1800 for wheat at Delhi, are taken from a paper by the Chaplain to the East India Company in the *Statistical Journal*, 1843, p. 248: 1763, 20; 1768, 47; 1773, 10; 1777, 60; 1783, 6; 1787, 45; 1792, 12; 1798, 120. Reference may also be made to a paper by Colonel Sykes in the *Statistical Journal*, 1847, pp. 289—316; and to diagrams relating to Indian prices in the last century, prepared by the present writer and published in the *Report of the Committee on the Indian Currency*, 1899.

¹ Conversations held some years ago with experienced Indian administrators, in which the practice of Indian village dealings in agricultural products, and the minor commodities of the Hat (or village market), was compared with the dealings of the villagers in remote English rural districts, led me to the conclusion that custom had less to do, and keen bargaining had more to do, with the purchases of Indian Rayyats than with those of the English village. It may be

APP. I, I.

The revolution effected by modern methods of transport is conspicuous, when the conditions of mediæval Europe or of India a hundred years ago are compared with those, under which the populations of Western Europe draw large supplies of wheat from new countries. But many new countries would still be poorly provided with railways, if they were dependent on their own stocks of capital: technical advance is the chief source of their prosperity; but it would not have availed them very much, had not the capital needed for marketing their crops been mostly provided from external sources. It is true that they are dependent on their own resources for making roads: but that difficulty is partly overcome by trusting to railways, made by external capital, to do most of their transport; while they themselves make but few roads, and those of poor quality. For in the West of America "the average cost of transportation on wagon roads has been estimated at about 25 cents per ton per mile, and on the best improved roads in this country [America] between 10 and 15 cents, as compared with 8 cents on some European roads, one half of one cent by railroad, and one mill by steamship on the Great Lakes¹."

Railway and other companies build elevators to store and grade this grain; and these aided by "loan companies, banks, implement companies, and general dealers" all help to make it

hoped that suggestions derived from studies of India and other countries in like conditions, conducted in the spirit of Maitland and Professor Vinogradoff, may explain many of the apparent paradoxes of English mediæval history: and show that custom is often the gradual result of economic conditions; even where it appears at first sight to be their governing cause, rather than their effect. Contemporary facts, statistical and other, can be cross-examined freely: fragmentary records of past times cannot. Something more is said on this subject in my *Principles*, VI, x, 3; and in my *Present position of Economics*, 1885.

¹ *Report of the Industrial Commission*, about 1900 A.D., vol. I. p. lv.

Some reasons, independent of the lack of capital, militate against the making of good roads in districts whose atmospheric and geological conditions are those of the chief wheat regions of Canada and the United States, and in parts of Russia. Stone is not easy to be had in vast stretches of prairie land: a cart can make its way over the prairie in dry summer, and a sledge moves easily over the snow in winter. And when the country was being opened up, the first connections between considerable towns were often effected by broad gauge railways, which cost less to make than good roads: in 1875 I travelled between two considerable towns whose only connection was, for this reason, by railway.

“possible to bring a vast area under cultivation by means of a relatively small amount of agricultural capital¹.” The economies of the world market for wheat are mainly due to improvements in transport, and the communication of news; combined with modern facilities for bringing command over capital from rich districts to those which hunger for it. And as we have seen above (pp. 258—262) they owe much to subdivision and specialization of the risks of constructive speculation, such as would have been impossible without the aid of an organized market. The farmer can now either sell his wheat, and set all his capital in it free at once: or he can store it, if he expects its price to rise, and meanwhile borrow money on it.

2. *Cotton Exchanges. Partially organized markets for wool and some other crude products.*

While the most important markets for products in the world are those that deal in staple grains, and especially wheat; the next most important are those connected with cotton. The cotton markets of New York, New Orleans, and Liverpool are intimately associated; and may for some purposes be regarded almost as a single market. Together they practically control the price movements of the chief sorts of cotton for the whole world.

The grading of cotton is a more delicate and difficult affair than that of grain. For the manufacturer of cotton stuffs is generally very nice in regard to the quality of the yarn on which he works: and therefore the spinners must be equally nice as to the quality of their raw material. Further, as payments for work in cotton mills are chiefly by the piece, the introduction of inappropriate material is apt to breed friction; and it often leads to disputes, that are more costly than the direct losses occasioned by slight faults in the product. Partly for this reason, a heavy strain is placed on those, whose duty it is to adjust the differences that must be paid when cotton is tendered, which is not exactly of a standard grade, but yet is so near to it as to be good tender. It might appear that the

¹ See Professor Mavor's illuminating article on "The economic results of specialist production and marketing of wheat," *Pol. Sc. Quarterly*, Dec. 1911

APP. I, 2. difficulty should be solved by still further curtailing the range of sorts which may be offered as legal tender in lieu of the exact standard grade. But that course would much increase the chance that a powerful clique might succeed in engineering a "corner": for it might buy cotton (or wheat) of a specified grade for delivery at a certain date to a greater amount than the total stock available; and thus be able to demand ruinous terms from those who could not deliver¹.

The cotton market is more complex than the wheat market: for yarn itself is a raw material for cotton cloths which are themselves raw materials for many industries: and both yarn and cotton cloth are apt to be sold forward in great volume, for long periods and at prices run very fine. The spinner, who contracts to deliver yarn at a price, generally secures himself by buying futures of raw cotton: and the manufacturer undertakes engagements for the delivery of piece goods a long while in advance; because spinners or brokers are willing to undertake to deliver to him, at prices and times specified beforehand, such qualities and quantities of yarns as he may desire. Even the broker dealing in raw cotton often buys "futures" to match each of his sales; for his sales are apt to be in some narrowly specified sort of cotton, and his dealings on the general market must be in a standard grade: he thus bears himself only the risk that the sort of cotton which he has contracted to deliver

¹ There has consequently been some tendency to enlarge the range of sorts that may be offered on payment of a difference, in spite of the fact that a miller or spinner may be much inconvenienced by failing to get almost exactly what he wants: for it has been observed that such success as has been reached by attempts at corners on wheat and cotton exchanges, has been largely caused by the narrowness of the range allowed. And indeed it has been suggested that the authorities of an exchange should be empowered to relax the rigidity of the rules (several methods have been suggested), when divergence of the prices at the time of settlement for the contract quality differs widely from those for other qualities at the time, and from prices for that quality in the past, and in terms of rather distant futures.

The Report of the U.S.A. Commissioner of Corporations on *Cotton Exchanges*, 1908—1909, devotes the greater part of three considerable volumes to a study of the advantages and difficulties of the various methods adopted in various Cotton Exchanges, notably those of New York and New Orleans: the general upshot apparently is that the Committee of the Exchange should adjust those differences from time to time to existing commercial conditions; in spite of the possibility that their decisions may on rare occasions be biased by their own interests, or by the manoeuvres of powerful speculators.

will rise relatively to that which he has bought. But as in the parallel case of a wheat market, this is a small affair. Dealings in yarn futures have never been common except in England; and it appears that they are declining, in consequence of the tendency to an increase of the differences in value between yarns of different makers, which would be classed together in an official grading. APP. I, 2.

Futures in cotton are quoted many months ahead and may therefore exercise some direct influence on the sowings of the coming crop: but at present cotton growers are less alert than the greater part of those who grow wheat for export. The influence of organized marketing has gone together with a very great diminution in the addition, which is made to the price received by the grower for raw cotton, by the time the cotton reaches the manufacturer: and there seems good reason to believe that it has contributed to this result; though the development of railways, telegraphs and telephones has no doubt been the dominant cause of it. Until recently it appeared that the same causes had combined to diminish the fluctuations in the price of cotton. But between 1900 and 1909 these fluctuations increased; and for this retrogression the reckless use of the future system must be held in part responsible¹.

Wool cannot be graded as easily as cotton. Not merely does each fleece present widely different qualities, which must be "sorted" before they can be used: but, further, each district has its own varieties; and, even if the breeds were all the same, differences of soil and climate would soon differentiate them. Consequently a bale of English wool is apt to be of uncertain

¹ The Commissioner of Corporations, *l.c.* vol. III. p. 304, seems to prove this. The movements of cotton prices during the world-war are yielding matter for an instructive study at a later date.

A good deal has been written as to causes and results of the absence of organized markets for cotton in Germany. The chief causes seem to be the lack of concentration of German cotton industries; and the great distance of Bremen, the chief port of importation of cotton, from any of them. It is however to be noted that Bremen traders could speculate freely on the Liverpool exchange; and, what is more important, they were able to insure constructive ventures by "hedging" operations there. See also the papers on "Anticipation in the cotton market," and "Dealings in futures in the cotton market" by Chapman and Knoop, *Economic Journal*, 1904, and *Statistical Journal*, 1906.

APP. I, 2. quality, and to trouble the manufacturer by not being throughout perfectly adapted to exactly the same methods of handling. This difficulty is less in the case of wool from new countries. New Zealand sheep for instance are descended from similar ancestors, imported not long ago; and raised on large runs, where there is much uniformity of average circumstance and great freedom of interbreeding. Thus certain standards of imported wools give a definiteness to the great markets of London, and other large centres: while the local wools are perhaps less under international influences than are local wheat crops. Also, fashion is constantly displacing one kind of wool from a high place, and putting another in its stead; whereas what little fashion is seen in cotton goods, lies in the pattern rather than in the texture. Changes in relative values of different fibres are therefore much greater in wool than in cotton.

But still the total market for wool is so great, and the demand of the western world for woollen goods is so much less easily satiated than for cotton, that the wool market of the world is very highly organized on a pattern, which resembles that of the cotton market as closely as the difficulties of the case will allow. The Bradford Conditioning House takes samples carefully, and weighs them, before and after they have been desiccated, on machines accurate to within a twenty thousandth part of the weight tested: and it appears that markets for wool "futures" have existed at Roubaix-Turcoing and Antwerp.

There are more or less highly organized markets, in which "futures" are bought and sold, for maize, rice and other grains; for jute and other textile materials; for petroleum and for vegetable oils; for cotton seed, quinine and for many other goods. And at the centres of certain industries a large speculative business is done in some of their special products; as for instance in beef and pork products at Chicago.

We may pass to the markets for iron and metals. Some of the chief products of ore and coal can be graded fairly well: the demand for them is liable to extreme fluctuations under the influence of changes in commercial credit generally, and especially in the credit which the public accords to new joint stock companies, and to extensions of old companies. Consequently

highly organized markets exist only for certain definite iron and steel bars, etc.: "futures" are sometimes sold so recklessly as to invite a corner; and the price of Scotch or Cleveland bars may rise for a time to an unreasonable level, relatively not only to the general prospects of trade, but even to the prices of other descriptions of iron and steel of substantially the same quality. APP. I, 2

Nearly every important branch of modern industry, except agriculture, is apt to be thrown out of gear at once by a check to the supply of coal: while a check to the supply of iron, however widespread its indirect effects may be in the long run, does not strike sharply on more than a few industries. But these few are important; and their business is in general quick and urgent; partly because prompt delivery of the machinery and other plant which they produce is often essential to their customers, and is likely to be enforced by contract under rigid penalties. The largest users of iron are getting more and more into the habit of owning iron mines, with results that are studied in Book III¹.

The markets for copper and tin are highly organized and are liable to great fluctuations, and that for two reasons. One is that the old and narrow sources of supply are giving way to new and richer sources: these are largely in places remote from the chief seats of industry, and are apt to move almost as fitfully as the sources of supply of gold and silver themselves. Another reason is that these two metals are imperiously needed for certain specific purposes, and a scarcity of either may arrest, or throw out of gear, large industries. Electrical developments have indeed increased the demand for copper at an almost unparalleled rate: though some authorities hold that the demand for it, as well as for some other metals, will be largely modified by aluminium; for its abundance, lightness, electrical conductivity and strength in certain alloys seem to promise a new era when the already great progress in the methods of its production and treatment has gone a little further².

¹ The peculiarities of the English speculative market in iron, its relations to the world iron market, and the curious episodes of 1904—5 are described by Mr Macrosty in the *Economic Journal*, September, 1905.

² The control which German financiers obtained over the chief sources of some metals before the world-war, may ultimately be found to have been a contributory cause to these fluctuations.

APPENDIX J

SOME MINOR PROBLEMS OF MARKETING¹

- APP. J, 1. 1. *The costs of marketing perishable products, when demand is imperious and supply is uncertain, are always high.*

No modern has carried his demand for choice food to as extravagant lengths as Lucullus did: but all well-to-do people consume many things which would not have borne the journey to the table of Lucullus, pay what he would for them; and opportunity has developed a habit of consuming things out of season and out of place. The habit has spread downwards. It has passed over those of the middle classes, who are forced to keep up on slender means a certain dignity of house, dress and education: but it reached the better paid artisans of Anglo-Saxon countries some time ago; and it is making its way throughout the western world.

Even a century ago and even in the richest countries, only a few persons could afford to pay prices for ordinary comforts and luxuries sufficient to defray the expense of bringing them from far: the systematic massive trade over large distances for various sorts of food, to be consumed by the people at large, waited for cheap and rapid transport by railway. The leadership which England obtained in the service of railways was a chief contributory cause to the relatively luxurious life of the artisans of her cities and industrial districts in the middle of the last century².

¹ This Appendix is associated with the sixth and seventh chapters of Book II.

² In *The food of London*, "which discusses the sources of supply..., and machinery of distribution of the food for a community of two millions and a half," by George Dodd, 1856, will be found a full and suggestive account, which may be compared with present conditions. The tonnage of British steamships at that time was only a twelfth part of the whole: but they were of course

The more perishable a product is, the greater of course are the losses of the trader who handles it; and the higher the charges he must make for those parts of it, which he sells in good condition, in order that his business may be fairly profitable. But his losses may be small if the demand for the product is steady, and its supply is under perfect control. For instance, the hot morning rolls which nearly every well-to-do family before the war consumed in Continental towns could be supplied cheaply, because the demand could be anticipated before the baking began. But a Café, dependent on excursionist traffic which varies with uncertainties of weather, cannot afford to keep a supply of perishable food at low prices. And yet fruit and vegetables in rural markets are cheap: because everyone is contented to buy the things that are on hand, and little goes to waste.

Speaking generally, extreme influences of perishableness on costs of supply are exerted only when it is associated with imperiousness of demand, and with uncertainties both of demand and supply; as in the case of an imperious wealthy demand for choice fruits, flowers and fish, which pays relatively little attention to seasonal variation and temporary changes of supply. It is well known that retailers who are able to meet almost any sudden demand for things, which must on occasion be supplied from afar at great expense, and with much loss on the way, are to be found only in fashionable districts. They must devote care and expense to a certain dignity of appearance: there is seldom any effective competition to compel them to sell even

pressed into the service of perishable food. There were a good many large dairies in the outer ring (now regarded as one of the inner rings) of that "district covered with houses" called London; but in 1853 the "Eastern Counties" and other railways brought 3,000,000 quarts of milk annually from the country. It has been said, partly in earnest, both in New York and London, that a family returning from a summer holiday at a farm house had some consolation in being able henceforward to rely on a constant supply of fresh garden and dairy produce.

When passing in 1875 through boundless fields covered with cattle on either side of the Union Pacific Railway, I asked the wife of a local farmer what was the price of butter. She replied that no one took the trouble to make it, except one farmer two hundred miles down the line; he sold it for half-a-dollar a pound and sent it along the line to anyone who might want it. Similarly the early great ranch holders in California—a splendid fruit and vegetable country—when they wanted to provide delicacies for a visitor, opened a tin of Eastern peaches or pears.

APP 3, 1 common things cheaply, and their prices all round are very high¹.

The influences exerted on the price of fish by the difficulty of preserving it are notable. It can be had at low prices in East London and other places, where the popular demand for fried fish is very large and constant, and it can be obtained direct from wholesale markets. But well-to-do customers pay generally prices, that exceed those received by the fishermen, by larger percentages for the inferior than for the better kinds of fish².

Some apparent irregularities are seen in the retail prices of things which are joint products coming from a single source. For instance the relative prices of the better and the inferior joints of beef vary very greatly from place to place, and in some cases from season to season; because the demands for the two kinds vary irregularly. Thus in some country districts on the Continent, where beef is nearly always boiled or stewed, the prices of the best parts are not much above those of others, and are very much below those of all large cities, and of England generally: but a concourse of rich summer visitors in a place, where but few of the people eat fresh meat, will often raise the price of the best joints much above those current in England. The vast and almost exclusive demand for those joints in the fashionable quarters of London, exercises but a moderate influence on their price, because the inferior joints of the same animals are sent to the poorer districts from the central markets which supply all London³.

¹ Universal Providers are however making some exceptions to this general rule

² The prices received by the fishermen for inferior fish are generally low. but the costs of conveying them, duly preserved, through wholesale and retail dealers to customers are not much below those for the better sorts. Though the excess of retail prices for fish over those paid to the fishermen is very high, the inherent difficulties of the trade, aided perhaps by strategical movements on the part of professional dealers, have proved very fatal to attempts at its direct cooperative retail distribution

³ Except in very hot weather meat can be kept a long time by modern appliances: and the influence of weather on its price is most noticeable in working class districts, where such appliances are rare. On a Saturday night in summer before the war the prudent housewife could buy good meat for fourpence a pound.

2. *Influences on the costs of marketing exerted by varieties of individual requirements and tastes. Illustrations as to furniture and as to fashion goods.* APP. J, 2.

Furniture is a representative of goods, which the retailer must select with reference to the general requirements and tastes of those by whom he is surrounded. If he is situated in a working class quarter, a comparatively small stock, calling for but little thought, will satisfy nearly all demands: it can be turned over rather quickly: and, if cash payments are in vogue, it can be profitably marketed at prices not much in excess of the very low costs of the steady, massive, mechanical production of such things. It can be sold cheaply and therefore it must be sold cheaply, for his customers, especially those who buy for cash, are alert: many of them can judge fairly well the strength and durability of the things shown to them, and they are likely to have made comparisons of various stocks before purchasing.

But a wealthy district offers scarcely any scope for a shop which presents only a few varieties of each sort of furniture for inspection. It is not enough to make provision for the different scales of expenditure of the several sub-classes of the well-to-do class. for each customer will have his own preferences among similar things of about equal costs. In fact a person may easily prefer one piece of furniture to another, which serves a similar purpose but is more costly. and, in that case, he may make a better bargain at a shop where a large choice is offered at high prices than at another, where prices are kept low in order to force a rapid sale on a relatively small stock scantily displayed¹.

It has been generally assumed until recently that no retailer is likely, even in a good thoroughfare, to attract as much custom as would enable him to turn over rapidly a stock containing a great variety of similar goods for the choice of

¹ This may perhaps be made clearer by a numerical illustration. Let us suppose that the wholesale prices of three pieces of furniture serving the same purpose are £10, £11 and £12 respectively. The purchaser would at equal prices have preferred the first to the second, and the second to the third. Going to a shop which shows all three, but adds 5s. in the £ to wholesale prices, he gets the first for £12 10s. If he had gone to a shop which added only 3s. in the £, but happened to show only the second, he would have paid £12. 13s. for what he liked less than what he did buy for £12 10s.: and if it happened to show only the third, he would have paid £13. 16s. for what he liked much less.

APP. 3, 2. the fastidious. But modern abundance of capital, modern developments of the arts of advertising, and modern facilities for attracting customers from a territory containing several hundred thousand well-to-do inhabitants, have changed the situation. It has been proved that a vast and well appointed establishment, well placed and under fine management, may earn so good a reputation, and attract so large a custom, as to secure rapid turn-overs of a vast and varied stock at remunerative prices. Everything then goes on a great scale; and lavish, though careful, expenditure on every side is good economy.

The new-born desire, even among people whose taste is not very highly cultivated, for furniture that shows individuality, and does not bear the mark of massive production by machinery, has done much to revive the artistic energy that distinguished the furniture trades of England and France in the seventeenth and eighteenth centuries. But the machine is found to be capable of imitating much of that fine individual work, with a delicacy and appearance of wayward fancy, which deceive all but experts¹.

Nearly all the conditions just discussed are intensified in the case of fashion goods. Those who create them must have

¹ A piece of noble old furniture can be taken to pieces; and the carving on each part of it imitated by an inexpensive machine, which guides a cutting tool on a fresh piece of wood to follow the movements of a fine metal finger that moves along the model. If the copies are to be sold as originals; care is taken not to send two of them to the same neighbourhood.

True and subtle originality is most frequently found in work, the full design of which is gradually evolved in the mind of the worker as he proceeds. But it seems that there is very little truth in the opinion that all furniture, which has been made by hand, has shown traces of the individuality of the craftsman. Some of it did; and because it was good, it was defended from rough wear, and has come down to us almost unharmed. But in places where nearly all furniture is made by hand, there is much monotonous weary work, without interest or initiative. Thus a visitor to the Grödenar Tal, in Tyrol, may find a nest of artists whose wooden statuary is sought for the adornment of cathedrals far and wide: and he may come across a peasant, with hard hands, who loves haymaking more than his winter work at wood carving, though that is of high artistic excellence. But he may also find in the same neighbourhood people who carve toys by the cartload, many of which are crude, ill-shaped reproductions of a pattern that has been set to them. An inquiry as to such a load evoked the answer:—"Before our father died, he taught us to make horses like this, and we cannot venture on anything new." The horses' necks were all bent in the same impossible and ugly curve.

high faculty, reaching up towards a real, if rather slender, sort of genius: and those who handle them must be intensely alert. It is true that, in this as in other industries that are rapidly changing, disproportionately large gains are reaped by men, whose ability resembles that of the bird that is specially quick to run in and pick up some of the grain that another has unearthed: but his customers get what they want, and have no cause to complain. He is a representative of a class that is becoming increasingly prominent: for the rule of fashion is spreading, till it will soon have little ground left to conquer. Neighbours are becoming strangers to one another as persons: but in matters of etiquette, even country-folk look to the arbitrament of the larger world, and in matters of costume they now learn quickly what passes there¹.

Changes in fashion are not now products of a wayward fancy, which is its own reward. They are, in large part at all events, deliberately planned several months before they obtain vogue. They are planned with a view to successful effect: for if they fail in that, they reap only a short-lived commercial success. But those who control them have always a general interest in causing anyone, who wishes not to be out of fashion, to discard the costumes of last season: and they are able to secure for themselves some of the gain which arises out of the ownership, or early preparation, of large stocks of material adapted for fashions which they have foreseen further ahead than other people. In every such movement there is much exercise of skill and taste of a high order: but since everything is done hastily, the effects are generally cruder than those which people of a lower mental quality would have evolved by the patient method of ancient custom: and this would be so, even if the commercial value of their schemes did not depend in part

¹ Even so long ago as 1893 it was said by one who spoke with knowledge on "Nottingham lace trade and fashion" (*Economic Journal*, vol. III. p. 714), "A peculiar hat is seen in M. Worth's rooms, and in a week women readers of weekly papers in the remote country districts of England are fully acquainted with all its peculiarities: though the richest and best creations of Paris are never exposed in shops, partly for fear they may be copied. It is no uncommon thing for the retail dealer to be told what is the fashion by his customers. Twenty years ago the customer came into the shop with the question on her lips." (Bray, *A about dress*, p. 233.) Newspaper dealers in working-class districts, find that a very large portion of their business is in cheap fashions journals.

APP. 7, 3. on the extravagance of the changes introduced, and on the large opportunities for display of wealth and of alertness by those who discard the declining fashion most promptly and completely.

3. *Some variations in the additions made by the retailer to wholesale prices, which are due to causes other than variations in direct costs of marketing.*

The retailer's hold on his customers is largely dependent on their general belief that he is acting well by them: he is not compelled to adjust the price of each particular thing to its cost together with a proportionate share of the general expenses of his establishment. Of course in any case he would need to add a large percentage to the wholesale price of things that are likely to spoil, or go out of fashion; that need much care and technical knowledge in selection and handling; and of which the stock must be large relatively to the sales: while in any case he would not need to add a large percentage to the wholesale prices of such things as sugar, or plain calico, or simple stationery. But in fact he goes far beyond this natural inequality in the rate of gross profits which he requires from different classes of goods. He sells at a very low profit everything which is bought so habitually, and of the quality of which the customer is so good a judge, that the market would not bear his charging a price appreciably higher than that at which a pushing rival can afford to sell it. But on the other hand, the traffic will often bear an extravagant rate of profit on things of which the customer is no good judge, especially if they are such as appeal mainly to wealthy people who do not trouble themselves much in order to save a little money.

At one time the retailer used to discriminate between different individuals by bargaining with each, in order to get as much as possible out of each. But this petty form of discrimination was early discarded in England, and even broader discriminations between different classes of purchasers are on the whole less prominent than they were. It was in fact England's early recognition of the high value of time, that led her to pioneer the way in having only a single price in the same shop for all customers who bought under like conditions¹.

¹ If a greengrocer charged the same price for vegetables which a customer

An instance of broad differentiation between different classes of customers which is not opposed to modern usage, is that of a shopkeeper with one establishment near the terminus of a suburban line chiefly frequented by season-ticket holders; and another near some large hotel, which is chiefly frequented by foreigners. Unless his prices at the former shop are about the lowest in the town, he will hardly earn his rent: even if he offers a new class of goods with which his customers are not familiar, he must price them low, or otherwise his repute will suffer: and, for the same reason—unless he deals in works of art or other goods of which no two are just alike—he must charge the same prices to all. In the second shop he is tempted to charge much higher prices: because he will in any case never see again the greater part of his customers, and they will not compare notes about him.

4. *The standardization of raw food products for marketing purposes.*

As the standardization of engineering plant promotes the standardization of other engineering products, so the standardization of seeds tends towards the standardization of vegetable products. Grains and fruits raised from the same stocks under similar conditions will always vary in some degree: but the task of standardizing raw food products, sufficiently to enable them to be marketed fairly well by description and quantity, is likely to become easier. At present however it is often a large and laborious task.

The growing imperiousness of demand, combined with the growing subtlety of the brewing trade, makes the brewer increasingly willing to pay a little premium to middlemen for supplying him with hops carefully graded: he would often

carries away, as for those which he sends out in a cart, he would give unequal services for equal prices, even if he gave no credit in the latter case. Placards announcing "Fixed prices," or "English prices" (the two phrases being convertible) were commonly exhibited in many of the best shops in the larger towns of the Continent a generation ago: but in most places they have done their work, and there is no longer any need for them. In some Oriental bazaars several thousand words often go to every pennyworth of dealing. Dealers in the South of Europe have been known to ask six times the lowest price which they were prepared to accept.

APP 3, 4. lose more than he gained by buying at first hand from the farmer.

Again experience shows that a retailer does not succeed as well with butter of varying qualities, as with a steady supply of a uniform quality, even though that be rather below the average. The consumers get accustomed to that kind; whereas where the quality varies, they resent any sorts that fall markedly below their best experience. Therefore various devices by wholesale marketing, or large scale production for the steady supply of particular qualities of butter are found to render services for which the retailer is ready to pay, because the consumer increasingly demands them.

But the middleman is being ousted from remunerative functions in regard to dairy produce by the spread of cooperative association among farmers. This movement has been pioneered by the highly educated Danish farmers: a creamery using the most advanced plant, and uniting in the same process the milk from perhaps a thousand cows, attains automatically a steady level of uniformity. The level is high, because the demand for a high standardization of product leads to high standardization of plant—in this case the cows; and this has been effected by cooperative cow-testing associations. Finally, the trade-marks, used by the various export associations, which conduct practically the whole of the Danish external trade, have been merged in a national compulsory trade-mark, applied with due tests by a Government official to all¹.

¹ A similar movement on a smaller scale has been applied to eggs: they are collected at short intervals, and each collection is kept together; for youth is the chief merit of an egg. There are however few agricultural products, whose merits are as simple and as much under human control as these. Even as regards butter, an instructive, if biased, argument that grading is best accomplished by a powerful merchant after the butter has been made, was recorded in the *Report of the Royal Commission on Agriculture*, vol. iv. 1896 (Q. 62,333—62,393). It is suggested (Q. 62,349) that a rise in the minimum standard demanded in London for butter, so great that sorts which were sold twenty years previously for a shilling a pound had become unsaleable, was connected with the arrival of cheap, wholesome margarine. The 800 Minnesota creameries which make butter for New York, do not sell direct to wholesale dealers. They find it advantageous to employ "a receiver" (a special sort of commission agent). His operations, as described by Professor Weld to the American Economic Association in December, 1914 (*Report*, pp. 128—9), illustrate the view that a stratum of middlemen, which appears at first sight superfluous, often does work which would need about an equal number of men if the stratum were eliminated.

This lead has been followed in France, Ireland and other countries; and even in America. But American mobility goes, as a rule, better with forms of association responsive to quick changes of condition, and readily influenced by strong individuals¹. APP. 3, 5

5. *The hold which small shops retain on poor districts.*

Mere otiose habit plays some part in the persistency with which many of those, who can least afford it, indulge in the luxury of buying in small quantities from small shops near at hand. But the hold of the small shopkeeper on poor districts rests for the greater part on solid economic foundations: some of these foundations are themselves the product of evil and unnecessary conditions: but others are likely to endure so long as a considerable part of the population live on small incomes and are inadequately housed.

To begin with, the cost of service in one of these shops is often so small as to be almost negligible. It may be attended by the wife of an artisan: he and she may want to increase their small incomes; or perhaps to accumulate a little capital

It is to be noted that butter and eggs, though perishable, are marketed on a relatively small margin between prices paid by consumer and received by producer: though fruit and vegetables, as to which supply and demand in any one market are uncertain, require large margins (*ib.* p. 131).

¹ It has been very successful in the cooperative organization of the great trade in citrus fruit from the Pacific Coast to the Eastern States. Local associations guarantee honest packing, etc.: and send their fruit to officers of a broad based federation, to be forwarded to wholesale dealers; who alone have as yet been successful in marketing these products, that are uncertain in supply as well as in demand; and they are apt to perish through gluts in particular markets, even while other markets are relatively bare. The Federation itself can however organize broad telegraphic information, which enables it to start the fruit in directions, in which it is not very likely to fall from the first grade to a low one, or even beyond, by being kept waiting too long.

Cooperative marketing is discussed in two instructive studies:—*Co-operation at home and abroad*, in regard to Europe, by C. R. Fay; and *Co-operation in agriculture*, in regard to America, by G. H. Powell. The general conclusion that cooperation in marketing among producers, must serve an apprenticeship to the work of professional dealers, before it can undertake the task of selling fickle products to distant consumers generally, was reached by the Industrial Commission (*Report*, vol. vi. pp 430—2). In many cases, "there must intervene brokers or commission men of some sort, capable of handling receipts in bulk, and breaking them up among the representatives of the wholesale and retail trade."

APP. J, 5. which may enable the man to set up as a small employer in his own craft. The wife wastes no time in the shop; but is busy with household affairs till she is summoned by the shop bell. This source of supply of small shops seems likely to endure long.

And there is perhaps an equally permanent demand for them. When an unexpected need suddenly arises, it is convenient to send out a child to shop close by. But the chief sources of the demand for numerous very small shops are the improvidence of many, and the want of storage of all who have no adequate house-room. There are indeed some people not habitual drunkards, who cannot keep away from any alcohol they may have in the house: so they pay the retailer a very high wage for taking charge of their stock of it, and serving it out to them a little at a time; and under the circumstances they make a good bargain. In many districts no one buys coal by the ton, except to sell it again; and even a hundredweight in a box may tempt to extravagance, and attract greedy neighbours asking for a loan. So it is often bought by the penny-worth¹.

Further the small shopkeeper may often indulge in the honest boast, that he is the banker of his poorest neighbours in their time of distress. He in effect lends to them on far lower terms than anyone else could, except as a matter of charity: for his ordinary business automatically gives him an insight into their character and their needs. The occasions, on which this aid from him is really necessary and on the whole beneficial, are indeed happily diminishing under the influence of improvements in education, sobriety, insurance by various

¹ Miss Octavia Hill, on taking a room in a poor district, found no coal-box; and for that and other reasons, she thought it best to fall in with this practice. And, when Prof. Conrad started a cooperative store in the country and tried to sell coffee by the pound, the men told him that their wives consumed it so much faster, when bought by the pound than by the quarter ounce, that they spent more on it than before, even though he was selling it at a cheaper rate. (See his *Report on Retail prices*, p. 122) Similar habits seem to prevail even more strongly in southern and eastern countries; and it has been well said that the size of the smallest coin in common use is an inverse measure of the stage of civilization. In some Indian villages a whole rupee is an unknown coin: while See maintained that an American workman must be so lacking in stamina as to be of little use, if he "buys his groceries by the quarter dollar."

agencies; among which cooperative stores are to be held in exceptional honour, on account of their courageous endeavours to induce the people at large to make expenditure run a little behind income: and the time is not in sight at which there will be no need for such aid. APP J, 6.

On the other hand the plea that has been urged with some vehemence especially in France, that the small shopkeeper has a right to live, cannot be accepted without qualification: though a sudden economic change like that which deprived hand-loom weavers of a livelihood may indeed call for emergency measures¹.

6. *Marketing and industrial peculiarities of various capital cities.*

The remarks made above (II, VI, 6) as to the industrial conditions of large cities generally, apply in the main to capital cities: but yet they stand in a class by themselves. For they offer the best opportunities to those traders, who aim at earning very high rates of profit on relatively small sales of choice goods, made in part by artisans with whom they are in immediate touch. Also they are the largest general markets for common goods; and they have always been chief centres of government and finance, of wealth and fashion and luxurious expenditure. Again, while many of the functions of Government tend increasingly to be delegated to Local Authorities, modern means of communication have increasingly concentrated the supreme control of the financial enterprise of each country in her capital. London, Paris, and especially Berlin, have greatly increased their dominion over the industry of finance during the present generation: and this change is representative of a general tendency for industries, that need little space and horse-power, but much wealth and much alertness, to seek

¹ Some opponents of Grands Magasins have maintained that no one has the right to follow more than one occupation. "If you allow a Grand Magasin to sell everything, draperies, hats, boots, umbrellas, books and perfumes you rob me, who am a specialist of my livelihood." Many proposals, some of which have been partially accepted by the legislature, for retarding the growth of these intruders by taxes increasing progressively with the variety or the magnitude of the sales of a retail dealer, are set out in full by Et. Martin Saint Léon (*Le petit commerce français, sa lutte pour sa vie*, ch. v.).

APP J, 6 capital cities. They do so partly for reasons of industrial economy, but chiefly for the sake of the special advantages in marketing which they find there.

The high grade industries of London are of several kinds. Some of them work up the choicest materials, by labour of the highest and most varied qualities. London's import trade brings to them rare materials, the best of which are chosen in docks and warehouses for London industries, and the rich residents of London offer a critical but generous demand for their products. Similar customers from elsewhere go to London for their finest purchases; because the local demand has called into existence employers, who will pay the highest price for the best of materials. The most capable and critical of workers in nearly all the smaller industries, and in some of the larger, seek London; where the highest wages are to be earned by working on the most costly materials for the most exacting customers. Thus, though printing is the only very large industry which looks to London as its head quarters, there are many important industries of which the highest excellence is found only in London¹.

On the other hand, the low grade industries which congregate in London owe comparatively little to the marketing advantages which are to be found there, and indeed many of their products are among the lowest of England's exports. They are developed in London by a peculiar class of workers who are fairly alert,

¹ "In certain trades, even though the dominant influences are against her, there are special kinds of work which tend to be retained by London. In some cases this is explained by the necessity for prompt execution of work, or when, from its artistic or complicated character, the direct and constant supervision of the bu'er or his agent is desirable. It happens also sometimes when great excellence is demanded. Thus we find that, while Birmingham makes much jewellery from well-known patterns, London is the centre of the finer work that is marked by originality of design, that the best carriages are still made, and made throughout, in London, that the best surgical instruments and the best cutlery are secured by the combination of London workmanship and Sheffield steel, that the best scientific instruments, the best work in stained-glass windows; and, in spite of the number of provincial factories, the best organs continue to be made in London." Booth and Aves in *Life and Labour of the People*, A. D. 1903, IX. p. 184. The London market attracts and educates tailors, who earn nearly the best wages of their trade in the world, and make quite the best coats. on the other hand, London rookeries shelter men and women from Eastern Europe, who make nearly the lowest grade of coat for nearly the lowest wages.

and keen, and, though not very strong in body or character, can do light monotonous work quickly and well. Also they are keenly appreciative of the excitements of London life. they buy fish and other food to suit them at prices far below those, which are commonly entered in official price lists. house-room is dear; but they are content with little of it APP J, 6.

Since French genius generally excels in fine work, for which great mechanical power is not needed, it is only natural that Paris should be unrivalled in the attractions which she offers to delicate and artistic manual skill, and be herself the factory and the mart for nearly all the finest French products. but she is without a great specialized industrial entourage, such as those of which Lille and Lyons are centres.

Berlin, Vienna, and other capital cities resemble London and Paris in having the largest populations and the largest aggregate of manufactures of any cities in their several lands. But no one of them is the central mart of a very widely spread specialized industry; though it is true that a group of men of rare genius and energy have made Berlin the chief seat of the German electrical industries, which are at present the most important in the world. New York, though not a centre of Government, may yet be classed for the present purpose among capital cities. For instance she has almost a monopoly of the finest American jewelry; though common jewelry is seldom made there. She has special difficulties, because many of the poorest and weakest immigrants are dropped within her borders by the stream that passes through her to the West

Speaking generally, however, the wealth and knowledge and sense of social responsibility of the Governments, and of the wealthy populations of capital cities, are lessening the causes which have specially adapted many of their industries to decadent populations. New facilities for traffic are enabling large numbers of those, who work in them, to have their homes in suburbs, where the children can play in fresh air and the same facilities are giving to the residents in such suburbs advantages that are beyond the reach of country folk. *Rus in urbe, urbs in rure*, the cherished ideal of the philosopher, may ere long be realized in old countries, and even more fully in alert new countries, in a degree that seemed beyond hope

APP. J, 6 even a short time ago: and the economies of making and marketing may no longer promote unwholesome overcrowding¹.

¹ It is true that the rate of mortality is not exceptionally high in London and several other great cities: but that does not prove that the general conditions of life in them are healthy, any more than the high mortality in hospitals proves that their conditions are less healthy than those of ordinary houses. People, who are strong and vigorous, flock to a great city in quest of the high earnings to be obtained there by energy and ability in all the various ranks of life: and those who fall into ill-health are apt to retire to places where rents are lower: not infrequently indeed to the homes of their childhood. A country district that yielded specially high earnings and attracted specially good lives, while shaking itself free from lives that show signs of weakness, would probably show a far lower rate of mortality than is to be found in any great city. In an article entitled "Where to House the London Poor," published in the *Contemporary Review*, February, 1884, the present writer advocated tendencies, of which Mr Ebenezer Howard was already a leader; and subsequently bore fruit in his crusade for "Garden Cities."

APPENDIX K
ON EDUCATION, WITH SPECIAL REFERENCE
TO A BUSINESS CAREER

1. *The development of faculties at school*¹.

APP. K, 1.

Studies cannot be arranged in order of merit absolutely. Those studies are best for a child in any phase of its development, which call into the fullest play the highest activities of which it is capable in that phase. For instance, kindergarten methods of assorting flowers may probably be more educative to the very young child than formal lessons in language. That phase being outgrown, a boy is likely to get more true education for a time from the study of words than from almost any other: for he is still too young to apply scientific method in spontaneous study of things. His mind is now ripe for a little, but only a little, of the strong discipline of mathematics; and some training in music and drawing seems to be enjoined by Nature as well as by Greek precept. But he has more to gain from handling words than from any other exercise: for the materials for his work come to him gratis and in abundance; and in building with them, he is called on to exert the highest spontaneity of which he is as yet capable. Demands are made on his general intelligence, his judgment, his sense of proportion, his logical acumen, his perceptive sensibility and his taste; and in a greater or less degree he can rise to these demands. He is architect, engineer, and skilled artisan all at once. There seems also no doubt that Latin is the best language for some parts of this work.

The boy passes gradually out of this phase and becomes fit for the next. In that he may begin to make a scientific study

¹ This Section is associated with II, x; especially pp. 356—7. Much of it is reproduced from a letter published in the *Times*, 5 March, 1905.

APP. K, 1 of things, whether they be material, or the ideas which are the truest realities. This work cannot be pushed far at first without a strain. But the study of the relation between cause and effect should be begun early: large use being made of verifications by experiment, such as are afforded by elementary hydrostatics, even without the aid of mathematics. History should also be treated in some degree as a study of cause and effect: though here verification is seldom possible, and the bias of a historian or a teacher may make the worse appear the better reason.

Studies of the laws of nature of chemical products and of mechanical agencies, with reference to successive increases in their efficiency, are of primary importance in the education of youths who are likely to hold responsible positions in industry, or in almost any branch of trade. They tend in high degree to stimulate alert intelligence in general; and in particular that kind of intelligence in which British manufacturers led the world in the first half of last century; though now they are outpaced often by Americans, and sometimes by other peoples. For these and similar reasons, it seems desirable that the study of languages should retreat gradually into the background after the age of about fifteen; though it should retain a considerable place for several more years. And, as a corollary, it seems to be required that the headmasters of some, at least, of the chief schools should be thoroughly imbued with the spirit of science in its relations to things, as well as to events and human actions. But while language falls into the background, the spirit of literature should come into the foreground. Appreciative study of English classics should be encouraged: and, above all, the difficult task of teaching boys to write their own language well should have precedence over the easy task of correcting relatively crude faults in Latin and Greek composition¹.

¹ The practice of compelling boys to learn Greek accents, which they are told to neglect in pronunciation, and which were unknown to the Greeks themselves, occupies precious time and energy. It injures character, by suggesting a low appreciation of the value of time; while the study of constructive science has the opposite effect, for its ever-growing ambitions are greedy of time.

No doubt many of the ablest business men and statesmen have received an almost exclusively classical education. But that result is fully accounted for by the facts that nearly every boy, who has had first-rate educational advantages in childhood, has gone to a classical school; and that nearly all the ablest pupils

2. *University training for the responsibilities of business*¹. APP. K, 2.

The higher education of professional men has always been arranged with reference to the services which they may render to the State: but little care has been taken, till recently, to make similar provision for business men. Britain is now setting herself to that task; though as yet with less energy than America and even Germany are doing.

It is indeed true that a man is likely to be more efficient in business who has braced his mind to hard work in subjects that have no connection with it, than if he had occupied himself with an enervating form of technical instruction, however directly that might bear on his after work. But, provided the studies be themselves of a truly liberal character, the closer their relation to his after work, the more active is his interest in them likely to be. To a colliery manager, who has made a thorough study of geology, the shafts and galleries of a mine are a scientific museum and laboratory: his mind grows with his work, and he may increase the world's wealth of knowledge. As geology is related to mining, so is economics to general business. As the miner needs to make more intensively, but with a narrower range, the same studies as the geologist makes; so the business man needs the same kind of studies as the economist does: but

from such schools have gone to Universities, at which a knowledge of Greek and Latin is required, and classical studies have had a chief place.

Some measure of the disturbing influence thus caused may be obtained by reflecting on the large preponderance of artistic ability at Florence in her prime: art was the chief route to public esteem, and therefore able, high-spirited youths became artists. To take another illustration: let us suppose that in England the headmasters of the chief schools had been selected for their musical attainments; and that music had dominated her University curricula. Then the ablest boys would have been regarded as the *peculium* of a musical headmaster: and, if he had happened to be colour-blind, and a lad with the genius of a Rembrandt had unfortunately shown some musical ability, he might have grown up to be a moderately good musician. One of the ablest and most enterprising headmasters in England not long ago objected to mathematical studies, on the ground that Euclid calls for no mental faculty except memory. Being himself "science-blind," he had no notion that a boy with a mathematical bias quickly grasps Euclid's method, and afterwards merely glances at the general line of one of Euclid's arguments, filling in the details for himself.

¹ Much of this Section is taken from papers printed in connection with the foundation, in 1903, of the Cambridge Curriculum in Economics and some allied branches of Political Science.

APP. K, 2. his range is more circumscribed, and his penetration reaches further into particular details.

Every study exercises, in various degrees, perception, imagination and reason. Perception may be trained in childhood. The springs of imagination belong to early youth: it is the greatest of all faculties; and in its full development it makes the great soldier, the great artist, the student who extends the boundaries of science, and the great business man. Reasoning cannot be carried far in complex problems, till youth passes into manhood. The business man needs all three: especially he needs imagination to put him on the track of remote and invisible effects of causes which are obvious, and of the hidden causes of visible effects. General intelligence and common sense will, of course, go some way towards the solution of his problems: they are, in fact, better guides than mere academic training unaided by them; and in simple matters they almost suffice. But in others a greater effort, a larger range of view, and a more powerful exercise of the imagination are needed. For instance, to get at the real effects of plausible schemes for increasing steadiness of employment he must have learned how closely connected are changes in credit, in domestic trade, in foreign trade competition, in harvests, and in prices; and how all of these affect steadiness of employment for good and for evil. He must watch how almost every considerable economic change in any part of the Western world affects employment, in some trades at least, in almost every other part. If he is to look for those causes which are far off and weigh them in the balance, then the work before him is a high discipline for the mind. In such problems as this it is the purely intellectual, and sometimes even the critical faculties, which are most in demand.

In addition to a strong and alert mental faculty, the business man needs to have acquired a knowledge of human nature, together with the power of managing men, and to this end the social training afforded by life in a residentiary university of the Anglo-Saxon type is specially serviceable. For such a life draws out the faculties which are needed in the social relations of those who have to deal with large bodies of men and large public interests. On the river and in the football field the student learns to bear and to forbear; to obey and to command.

And, what is even more important, the comradeship of APP. X, 2. generous youth, unless marred by extravagance or vice, tends to develop the sympathies, which separate man by an impassable gulf from the most powerful machine which modern skill has taught "almost to think." Indeed an employer, whose sympathies are dull, often falls short even as a profit-winner; unless he has thought much, and cared much, about those sides of his work-people's life and characters, which are not directly reflected in the wages bargain. To learn this from personal contact is ever more difficult: for he is now often separated from the mass of his employees by several strata of subordinates. He lives among his own class; and this association is apt to make him look at labour questions from the employer's point of view. But undergraduate sympathy tends always towards what is, or appears to be, the weaker side: any bias, which an undergraduate may bring to these questions, is apt to be on the side of the employees. And such a bias does him no harm: for he will not take long to learn the full force of the employers' side of the case. Thus trained, he is often able, as both English and American experiences show, to read the minds of the employees more readily than can be done by an employer, even if much older than himself, who has not had that training. He interprets between the two sides: and thus that broad sympathy grows, which enables different social classes to put themselves in one another's points of view and welds the nation into one.

APPENDIX L

CONDITIONAL MONOPOLIES IN MULTIPLE OWNERSHIP¹

- APP. L, 1. 1. *Problems relating to an industry, which would constitute a powerful monopoly if in a single ownership. Illustration from the incidences of taxes on agriculture in a densely peopled country.*

There are two chief cases of multiple ownership of properties each of which would constitute a monopoly, if in a single hand: they illustrate important, but widely different principles. The ownership of the agricultural land of a country would confer a hard monopoly of the supply of food; if it were in a single hand, and food could not easily be imported from abroad. The monopoly of all the land and buildings of a great city, if in a single hand would appear as a latent menace to all its inhabitants: but the power given by it could seldom be abused without lasting injury to its owner; and, in fact, the multitude of owners of land and buildings in an ordinary town have an exceptional interest in developing its prosperity. These contrasted cases are now to be discussed.

It is a common belief, at all events in a country which has no foreign trade in agricultural produce, that land has a monopoly-value; because its total area is fixed by Nature. The belief would be fully justified if the cultivators of the land acted in concert, and so adjusted the supply of produce, that its aggregate price yielded the maximum excess over the costs (all included) of cultivating it and marketing the produce.

But the problem is more complex in a country where there is no such combination; whether the cultivators are tenant farmers or independent owners. It is indeed true that, even in such

¹ This Appendix is associated with III, II, 4, p. 421.

a country, a fixed tax on the land itself, taking no account of the manner in which it is cultivated, would act on the owners of land in the same way as would a similar tax in a country in which all the land was in a single ownership, thus constituting a vast monopoly. For such a tax would not affect the action of the cultivator (whether owner or not), nor the pressure which an owner could put on his tenant farmers: and, since it would not affect the amount of produce raised, therefore it would not affect the consumer. A landlord might stipulate that the tax should be paid by the farmer; and that would affect the incidence of an unexpected change in the tax. But, in so far as the future of the tax could be anticipated, the amount of the rent which the farmer could be induced to promise to pay would be diminished by the tax: therefore in effect the tax would be paid by the landlord¹.

In fact, however, nearly all taxes on agricultural land are assessed on its market value: and their incidence is much affected by the varying degrees of viscosity of the several elements of the problem. For the market value is partly due to recent investments of capital in the land; and the expectation that a tax will be paid on further investments tends to check a generous investment in improvements; and therefore to diminish production. The extent to which it will do so within a few years cannot be set out in any definite formula: but its effects have some affinity to those of a tax on agricultural produce in general, to which we may now pass, it being remembered that the country is supposed to have no external trade in such produce.

Agricultural produce is consumed by everyone: it absorbs a great part of the incomes of the working classes, a considerable part of those of the middle classes; but only a small part of those of the rich, even when the consumption of their domestics is reckoned in. All industries are interested in it about equally from the point of view of consumption: but the makers of agricultural implements and artificial manures and

¹ The tithe rent charge on each piece of land is fixed without reference to its yield (except as regards hops): and, though it varies with the official prices of staple grains in recent years, it does not materially affect the inducements to apply labour and capital to any particular piece of land. Therefore it acts almost as a fixed tax on land regarded as a monopoly in single ownership.

APP. L, 1. the transport industries alone look to it for any exceptional market for their products or services.

The greater part of the burden of this tax would therefore be distributed among the people generally as consumers, the pressure diminishing almost regularly with every step upwards in normal income. Farmers and agricultural labourers, besides bearing their shares of the burden in about equal proportion with others in the same ranks of the social scale, would further suffer from any shrinkage in their employment which resulted from a shrinkage of consumption caused by the tax: but no other very large class of producers would be affected by the tax in an exceptional degree. The consumption of most kinds of agricultural produce is however seldom very elastic: and therefore the reduction in their output caused by the tax would probably not be very great. Thus the chief influence of the tax would be a rise in their values on the market after paying the tax; and that would enable the landlords in the long run to make bargains with tenant farmers on more favourable terms to themselves.

It is an old remark that if a tax of one-tenth were imposed on agricultural produce; and yet (the demand for it being inelastic) its consumption were not diminished, nine-tenths as much as before would serve to remunerate the labour and capital employed in raising it; while one-tenth of the share, that used to be retained by the farmer for himself and his men, would go in taxation. Therefore the share left for the landlord to retain and to pay his tax with would be the same in amount as before: one-tenth would go to the taxgatherer; and the remaining nine-tenths would have the same value as his old rent had, except of course in so far as the landlord himself was a consumer of agricultural produce. That is to say a tax on raw produce, the demand for it being very inelastic, would not injure the landowners; because the produce of their lands is sold at competitive prices. But if land were a monopoly, and its produce were sold at prices fixed on monopoly principles, the price might have already been put so high, that an increase in it would compel some diminution of consumption at whatever cost of well-being: and in that case a part of the burden (in addition to the tax on their own consumption) would fall on the landlords.

Even as things are, the tax might possibly exert a small influence in this direction. For, if the increased expenditure of the poorer part of the population on their food crippled their consumption of other requisites of efficiency and vigour, it might in the long run so restrict the growth of the population in energy, if not numbers, as to hinder the rise in the real value of rents which would otherwise have occurred. Whether it did so or not, would depend mainly on the way in which the proceeds of the tax were spent; in other words, whether it was onerous to the population generally, or not.

It should be noted that the peculiar position, which land holds in the economic system of densely peopled countries, arises from the two facts (1) that the area of land is absolutely fixed by Nature; and (2) that the other requisites of economic development are capable of increase. In Russia the wealth of a landed proprietor has been measured by the number of "souls" which he could command to work on his land: and in some parts of Australia, where the soil is favourable to pasture and corn cultivation, but water is scarce, the effective value of land is governed mainly by its water supply. It is possible to conceive a planet in which the total available water is insufficient for nearly as large a population as the land would support with an adequate supply of it: and in that case, though water is mobile and land is not, water might hold as dominant a position in the economics of the population, as land does in a densely peopled country of this world.

Allowing yet more free play to fancy, it may be observed that if the stock of some important machines, say printing presses, could be supposed to be permanent and fixed in the same way as is that of land, a tax on them (independent of the work done by them) would be paid entirely by the owners of the existing printing presses, provided it did not drive any of them out of use; just as would a similar tax on all land. For they would all sell their services for what could be got (without any reference to the cost of production of printing presses). So the tax would not affect the output of printing, nor therefore its price: it would simply intercept some of the earnings of the presses on their way to the owners.

APP. I, 2.

2. *Interests which owners of land, and of good business connections, have in the semi-monopolistic advantages, that a city may develop by large local expenditure, well administered.*

Local taxation is commonly divided into that which is "onerous," and that which is "beneficial" or "remuneratory." Onerous local taxes, or "rates," are said to be those which are levied for purposes in which the locality has but a partial interest. Remuneratory rates are said to be those which supply the means of obtaining local benefits, in such wise that—under good management—they render services to the locality which outweigh their costs. These descriptions are adequate for some purposes: but they ignore the fact that, as a locality has some special interests which are not shared by the rest of the country; so the permanent residents in a locality, and especially the owners of land and buildings in it, have some interests which do not extend in full measure to other residents. Let us go into some details.

A national tax levied evenly on a whole people and spent on education, sanitation, etc., in such a way as to confer on them benefits in the form of health and energy and earning power, which are more than equivalent to the charges levied on them, is remunerative. In so far as it is levied mainly on the well-to-do, and spent mainly in the service of the working classes, it is *primâ facie* onerous to the well-to-do: but the purposes, for which it is levied, tend to make the country rich in material wealth and in the amenities of life; and therefore the tax is in some degree remunerative even to them.

Exceptionally heavy local rates levied in a town for the purposes of education, are said to be in some measure onerous; because those, who have benefited by the education, may leave the locality. But, if local industry and trade are developed by the facilities to which good education has given increased strength, the expenditure may lead to net immigration; and thus greatly benefit local owners of land, buildings, and established businesses.

On the other hand, if mismanagement caused the rates of a town to rise greatly, while there was no corresponding increase in the attractions which the town offered to industries in general (that is if there were a great increase in those rates

which were in the main onerous), its population would grow slowly and might even shrink. Those who for any reason could not leave the town would tend to avoid industries on which the rates pressed with exceptionally heavy weight, and to drift into those on which the rates pressed lightly. Conversely taxes, so spent as to add to the advantages of living in a town more than the equivalent of their cost, would develop its industries generally: though, if devoted to a purpose, which was of great importance to some industries and of but little to others, its influence would act unevenly. Thus, if there were a scarcity of available building ground in the town, those industries, which gained very little on the balance from the expenditure of the new taxes, might actually decline to make way for those which stood to gain greatly by the change. An increase of onerous national taxes will no doubt tend to drive the industrial population out of a country: and good finance will tend to attract industries to it: but the rates of growth of population of neighbouring countries do not differ nearly as widely as do those of neighbouring towns or cities in the same country: and such differences as exist, are due, save in a very few cases, to broader and deeper causes than differences in the pressure of taxation.

Much of the collective property, which the inhabitants of a well-managed town have built up, is at the disposal of any who choose to come to it, provided they can obtain suitable premises on moderate terms: but a considerable part of it is the exclusive property of those who own the soil, the buildings and the businesses established there. The firmer their hold on the town, and the firmer the hold which the town has on them, the more nearly do their interests approach to those of a town, such as Eastbourne, which was planned by a single owner on his own land, and remains largely under his control. Its permanent residents, if well advised, and able to override those residents who have no permanent interest in the development of the town, may sacrifice present income to relatively large deferred gains, in a constructive policy resembling that of a far-seeing monopolist. They seldom attain to so high a level; but they yet rise much above that of monopolistic ownership in weak or tyrannous hands.

APPENDIX M¹

NOTES ON RAILWAYS AND THEIR PROBLEMS

- APP. M, 1. 1. *Early phases of English railway traffic and finance. Causes of the rise and decline of canals.*

“Railroads” were originally roads on which rails of wood or metal were laid down to facilitate the passage of ordinary vehicles. They were introduced generally in some colliery districts during the first half of the seventeenth century: they enabled a horse to draw rather more than two tons, whereas, on an ordinary good road (of the kind then usual) his load was under one ton. Thin plates of iron were soon put on the wood; and in 1738 cast iron rails were used, and cast iron wheels followed. In 1804 Trevithick’s locomotive drew ten tons of iron on a railroad: but stationary steam engines remained for a long while in effective competition with it. Stephenson’s engine ran on the Stockton and Darlington Railway in 1825: but no railroad was licensed for passengers till 1830².

The early locomotive could move fast; and it had no difficulty in routing the mail coach. But it had very little power; and it was so extravagant of coal, that it could not draw heavy and bulky goods of low values at rates comparable with those charged by canals. If therefore the canals could have adapted themselves quickly to the increasing demands of

¹ This Appendix is associated with III, iv, v, vi. See also I, iv, 4.

² *The Companion to the British Almanack*, 1841, contains an account of the 135 Railway Acts passed from 1800 to 1839. Horses are the “power used” almost exclusively till 1826: soon afterwards locomotives predominate. *A treatise on railroads...and the comparative value of canals and railroads*, by Nicholas Wood, 1825, contains a thoroughly scientific study of the mechanical problems concerned. But he sees many advantages on the side of canals, provided they be administered vigorously. The history of artificial waterways in England from 1761 to recent years is sketched in the *Final Report of the Royal Commission on Canals and Waterways*, 1909 [Cd. 4979].

England's economic development, they might have even now carried a great deal of the internal trade of England: and the somewhat hazardous movement of her heavy industries towards the sea might have been kept within more moderate limits. APP. M, 1.

But unfortunately large capital, enterprise and organizing faculty were needed for developing chains of small canals into a great system. It was not an easy task to enlarge a canal, so that it could carry and pass through its locks, barges much larger than those for which it had been constructed: and there were but few canals which were so far self-contained as to be able to derive much benefit from such an enlargement, unless similar improvements were made by its neighbours. No doubt exceptional outlay is sometimes made by a particular locality for the improvement of an inland water-way, as in the case of the Manchester Canal: but the financial aid, which the shipping industry has derived from public outlays on the improvement of harbours and of the channels which connect them with the sea, was not forthcoming to English canals in the time of their distress. So some of them were speedily choked up; and this further narrowed the scope for the profitable investment of capital in improving canals that had made connection with them. Lastly steamships completely outbid those canals (of which the Avon and Kennet canal connecting Bristol with Reading may be taken as a type), whose province it had been to enable goods received on one coast of England to be delivered near the other, without the uncertain delays of a long coasting voyage.

Even if railway locomotives had long remained unable to haul heavy loads economically, these causes would have ruined nearly all English canals, unless public funds had come to their aid. The time had not yet arrived for the general recognition of the fact that canals, being in effect public highways, need to be organized by Government, and perhaps financed by it. Nor is that surprising: for, till recently, roads were partly financed by private enterprise in return for tolls; and it was not easy to foresee how great an injury to the country might be caused by the lack of adequate depth and breadth of any link in the chain of canals¹.

¹ The Avon and Kennet canal adds much to the beauty of a branch of the

APP. M, 1

As things were, technical advance in the laying of railway tracks and the construction of locomotives proceeded steadily; and the load of a goods train soon surpassed that of a string of barges of moderate length. Two uniform gauges, one "broad" and the other "narrow," were adopted: and intercommunication between railways became easy. The coach from London to Oxford had occupied two long days in 1742: and its time had not been reduced below six hours, when it was supplanted by a train which took but one and a half hours. Before 1850 Lardner had sometimes found himself travelling at seventy miles an hour; and the 193 miles between London and Exeter were traversed in four and a half hours. These conditions had been partly cause, and partly effect, of the growing eagerness of Government and the public to welcome the fusion of railways which fed one another, the prohibition of fusions between parallel lines seemed an adequate safeguard against the development of railway monopolies. In the "thirties" railways served their apprenticeship: in the "forties" they learnt much of what they could do, and what they could not do. In 1844 a wave of confident expectation set in: it reached its climax in the violent speculation of 1845—6; and it broke down in the panic of 1847—8, of which it was a chief contributory cause. When it had passed away, England's economic policy had entered on a new career, and passed out of the special conditions to which this Section relates¹.

Great Western Railway, which faithfully preserves it in good order: and its lack of traffic has been claimed as a proof that canals are unable to render important services to England now. But some railways, even in England, were abandoned as being in unsuitable places. And, as is argued above (pp. 497—506), the last word has not yet been said in defence of English canals. As late as 1836, the first year in which speculation in railway securities ran wild, the canals attracted more new capital than any other class of investment, except railways, banks, insurance companies and mines (Levi, *History of British Commerce*, p. 220).

¹ A map of all the English railways sanctioned in 1844 (reproduced in the Jubilee number of *The Railway News*, 1914) shows the lines so scattered, and with so few common points, that there could not have been much effective competition among them; while their combination would not have much increased their monopolistic power. But the map (reproduced in Mr Cleveland-Stevens' excellent study of the development of *English Railways*) shows that by 1848 the foundations had been laid for the existing system of main lines with all their possibilities of far reaching competition, and eventually of their combined action. There is some interest in the comparison of the meteoric career of Hudson, the English railway king of the forties, with that of the American

It may however be added here, as belonging to early rather than recent history, that in 1844 an Act was passed, on Gladstone's motion, providing that every new licence granted for the construction of a railway, should embody a provision that the State might purchase it after twenty-one years at a very high price. He suggested two and a half times the railway's capital as the *maximum* purchase price: but eventually that was made the *minimum* price; and this was in face of the fact that a Parliamentary Committee had reported in 1840 that "as far as regards heavy merchandise, it appears probable that the canals will always secure the public against any unreasonable demands on the part of the railway companies." The net profits earned by a company were commonly assumed, in discussions on the Bill, to be likely to exceed ten per cent.: but they soon settled down to less than half that amount. In 1846 the securities of several lines had been selling at more than double their nominal amounts.

The next two years were full of trouble, but their lessons were well learnt; and the outlook for such railways, as were soberly financed and ably administered, remained without any considerable cloud; for the steam power, to which they had owed everything, had not yet moved towards its almost equally rich harvest on the ocean. For a long time all went well with England's railways; their expansion was not hindered by the narrowness of her territory; and they had no effective rival. Nearly all the existing main lines were well developed in the third quarter of last century. Railway outlay increased fast; but net receipts increased a little faster, till in 1872 they averaged 4·74 per cent. on the total "paid up" capital. Since that time the progress of railways has been less satisfactory, at all events from the financial point of view. Their capital has been doubled: and the proportion of net receipts to it has almost steadily diminished; though the gross receipts have increased faster than the capital, and the total amount of work done by the railways has increased much faster still¹.

Harriman in recent years. Each had daring and powerful constructive genius: each thought himself above the counsels of prudence, and perhaps even those of morality, of ordinary men.

¹ The number of passengers exclusive of season ticket holders increased

APP. K, 2.

2. *Curious contrasts in passenger traffic.*

Before 1844 English railways were of little use to the working classes. But a law was then passed that compelled every railway to run at least one train a day, in which people could be conveyed at a rate of not less than 12 miles an hour; at a charge not exceeding a penny a mile; and in carriages provided with seats and protected from the weather¹. The railway-companies resisted the change as far as they could; and, even twenty years later, there were few third-class carriages, except on Parliamentary trains; and these were often run (the Railway Commissioners not exercising their legal powers) at inconvenient hours, and kept in a dirty condition. For it was even then thought that the *ordinary* travelling of the working classes could not be worth encouraging: though they were tempted to make excursions by extremely low rates, three and sixpence being a common return fare from London to the southern watering places. But the notion that it would be good business to make third-class travel comfortable and rapid, gradually made its way; and finally triumphed in 1875 when the Midland put fairly good third-class carriages on all its trains².

It must however be admitted that there is some hardship in the rule that the ordinary charge for the poor man is adjusted to a comfortable method of travelling; so that he has not the choice of a rather less expensive method of travelling at a much lower cost, as he has on the Continent. It is true that the

about seven-fold in the fifty years ending 1912; but part of this increase in numbers was due to the rapid growths of urban and suburban traffic, and does not indicate a corresponding increase in volume. The number of tons of goods carried increased rather more than five-fold; the number of mineral tons which was rather more than twice that of general merchandise at the beginning of the period, had become three and a half times as great at the end.

¹ Lardner (*Railway Economy*, ch. x) gives statistics showing how the total number of miles travelled by third-class passengers was less than that travelled by first-class passengers in 1844, but more than twice as great in 1848. The average distances travelled were about 26 miles by first-class, and 13 by third-class passengers. The extreme measures, by which railway companies used to make travelling in third-class carriages uncomfortable, and even intolerable to well-to-do persons, are humorously described in Acworth's *Railways of England*.

² Gladstone warmly supported the movement. Its principles are well set out in an article on "Railways in their Social Relations" in the *British Almanac* for 1865.

artisan, when seeking work, can often get his railway fares paid by his Trade Union; but a minimum charge of half a crown for the equivalent of a day's walk is too high. This evil might be removed by adding fourth-class carriages to a few passenger trains, and to some goods trains. The official English contention that the latter practice is unsafe, is inconsistent with the experience of other countries. Special workmen's tickets, adapted to those who live some distance from their work, are palliatives of these hardships; but inadequate¹.

The excess of ordinary fares above the direct costs of transport is so great, that railways are apt to meet specially elastic traffic by very low fares, even when much of it must be carried at somewhat more than the average direct cost. Thus British railways, which carry comparatively few first or second-class passengers in the greater part of their work, sell first and second-class season tickets at charges below those of ordinary third-class tickets for an equal aggregate mileage: and yet the carriages used by them have to travel for the greater part empty one way in the morning and the other way in the evening; unless indeed they are put to sleep on a siding for the greater part of the day.

The principle of adapting passenger fares to what the traffic will bear, rather than to cost, is further illustrated by the practice of charging specially low rates for return tickets available only for a fortnight and lower rates still for week-end tickets. Those who can take but a short holiday are specially likely to be influenced by a low charge; and a reduction of a few shillings on the total expense of a week-end holiday, is more likely to influence conduct, than when it is but a minute fraction of the total expense to be incurred².

¹ On the Continent generally the working classes travel for about a halfpenny a mile; while in Prussia they travel fourth class for a farthing a mile. Where however the railways are sparse and circuitous, and especially in the mountainous regions of Central Europe, a journey on foot may be not very much longer in time than one by railway; and, partly through poverty, those who migrate in search of work, commonly go on foot. In France many express trains are only first class. But generally one can travel on the Continent in express trains second class for the English third-class fare; or for less, if one has a return ticket; but this saving is sometimes lost by charges for luggage.

² Further applications of this principle are when tickets for Family, School, Religious Society, Pilgrimage and other groups are issued at a low rate especially

APP. M, 3. 3. *The development of American railway regional and blanket rates.*

When the centre of the population of the United States had receded a considerable distance from the Atlantic, but had not yet reached the watershed of the Ohio, much goods traffic had about equally good access to the ocean by railway to Atlantic ports on the one side; and on the other by railway to the Ohio or the Mississippi itself, and the Gulf of Mexico. Difficult, rapid and ever-shifting as are those river courses, the ton-mile charges by steamers on them were much lower than those at which the railways could afford to carry ordinary traffic. But, in order to compete with the steamers, the railways made specially low rates between the Atlantic and the whole of the area, which had fairly good access to the Mississippi: and the rule, that railways might lower their rates in competition with water-routes, was generally adopted.

When the Pacific coast was developed, railways running west offered extremely low rates to San Francisco, in order to divert traffic from the naturally less costly route to Atlantic ports, and thence round Cape Horn to the Pacific coast: (the details of this conflict are being modified by the Panama Canal, but its main features are unchanged). Farmers and others in the Middle States, who saw goods carried past their doors to San Francisco at charges much lower than those which they were forced to pay for a "short haul" over a part of the same route, made complaints: and these evoked a clause in the Interstate Commerce Law of 1887 prohibiting a higher charge for a part of any route than for a longer part of the same route. This "Long and short haul clause" has however been found somewhat difficult of interpretation under ever-changing conditions¹.

in France, Switzerland and Italy, countries much frequented by rich foreigners. For the plan of a general reduction of fares, which works well enough in such a country as Hungary, would let off this foreign traffic at much lower charges than it can bear. These special facilities are not generally accessible to the foreigner; and they enable the poorer classes and others to make many pleasure excursions at a low cost. Compare the account of "*Tarifs Spéciaux pour voyageurs*" in Colson's *Transports et Tarifs*.

If anyone wants to go to London and back on a Saturday, he is not allowed to use a cheap week-end ticket; because such journeys imply urgent cause, and they are not likely to increase much in response to a lowering of fares.

¹ An article by Prof. H. G. Brown in *The American Economic Review*,

Meanwhile the economy of sending large trainloads, with APP. M, 3 little break of bulk, to Chicago and other great centres, together with the intense railway competition at those centres, had caused them to be adopted as "basing-points": that is, the charge for distant traffic to any point in the neighbourhood of a base was made up of a low rate per mile to the basing-point, together with the ordinary rate from the base to the station of delivery. If that station was nearer the place of origin than the basing-point, the charge became less for a long journey than for a shorter one. If this was prohibited, as it originally was, then the charges to all such stations were put at the same amount as those to the basing-point. That introduced some simplicity of arrangements, together with the inequalities and complexities that result from forced simplicity: and these results were extended much further when, instead of a single basing-point in a district, there were several. In this way in fact there was set up a single rate from St Louis to all stations south of the Texan border. For "as railroads were built and extended, one line would reach station *A* by passing through station *B*; and another line would reach station *B* by passing through station *A*; and so on through a ramifying network¹." And when this process had gone some considerable way, no great further change was made by adopting a single "blanket" rate between the whole region and St Louis. Such arrangements may claim to strike out paths of least resistance: but they do not seem capable of general application; and they are open to grave objections.

A strict interpretation of the "Long and short haul clause" was perhaps advisable in early days when struggles for the mastery of particular railways, as well as conflicts between railways, were often waged with unscrupulous ferocity. For, when rates between competitive points were liable to be put down to very low levels for strategical purposes, such a purpose might well be hindered by the fear that the railway would lose on its intermediate traffic. There were some cases in which

December 1914, shows in entertaining fashion cases in which it may be in the general interest that traffic should be diverted from a short to a long haul.

¹ See p. 94 of an instructive chapter on "Regional rate structures" in McPherson's *Railroad Freight Rates*.

APP. M, 4. the rigid application of the clause worked harm: but latterly the Interstate Commerce Commission, having obtained increased powers, has seen its way to relax rules, which pressed hardly in special cases. Thus was afforded additional evidence that the function of a Legislature is to give powers to authoritative Commissions; and in case of need to recast a Commission, or modify its powers: but not to attempt to govern by law¹.

4. *The importance of railway statistics, and their difficulties.*

The operations of railways are apparently much more homogeneous than those of most other industries; and international railway statistics relate to exceptionally large volumes of similar facts. But much of this apparent uniformity is illusive. The conditions of railway work vary greatly between different countries and sometimes even between different districts served by the same railway; and therefore things represented by the same name, and necessarily classed together in statistical returns, differ widely.

For instance, the work done on the average by a passenger or goods train in going a mile—a "passenger train mile," or a "goods train mile,"—means very different things on the main line, and on a minor branch of a great English railway. An American train-mile often represents thousands of "ton-miles"; that is, tons of freight moved a mile: on English railways it seldom represents many hundreds and often not many tens of ton-miles. If "wagon-miles" be substituted for train-miles we get units that are more similar in some respects, but less in others: for though the service rendered by a train with

¹ For instance, the Commission still allows a railway to lower its rates to any seaport far enough to meet, though not to extinguish, water competition. And (see its *Report* for 1913, p. 25) after referring to such a case, in which the railway's long-haul rate was not reduced below what was necessary to prevent its being "obliged to retire from competition at the water-competition point," declined to compel it to reduce all charges to intermediate points to the same level, when that was below those rates that were "reasonable *per se*" for those points. It goes on to indicate concessions, mostly temporary, which it makes in cases in which the new rules appear to press heavily.

The Hepburn Act strengthened the Commission by making its authority valid, unless and until over-ruled by the Supreme Court on a question of law. The causes that led up to this change are set out by Ripley, *Railroads*, Vol. I, chs. XIII.—XX. See also an account of "Public sentiment and the Hepburn Bill," McPherson, *l.c.* ch. XIX.

thirty wagons is three times as great as that of another with ten similar loaded wagons, the costs of the two services do not differ nearly so much. Ton-miles, wagon-miles and train-miles are all needed as the basis of statistical comparisons. APP. M, 4.

A million ton-miles on a "heavy" English railway such as the Midland or the North Eastern represent much less work than a million ton-miles on a "light" railway in the South of England. Train-mile and wagon-mile statistics make the services of English trains appear greater relatively to those of American than they really are; while ton-mile and passenger-mile statistics mislead in the opposite direction. And, as has been argued, small wagons, many of them not nearly full, are in some degree necessary conditions for the prompt delivery of small consignments starting from any of several thousand stations to be delivered at any other¹.

Sharp tools cut inept fingers; and railway statistics, like most others that relate to complex matters, are open to the charge that they often mislead the ill-informed. It is also sometimes objected that they are of less service in administration than the careful observations and reports of the loading, working, etc. of individual trains; while these are regularly made on well-managed lines, to serve as a basis for the policy adopted by the central authorities. Statistics supplement, but make no claim to supersede, that essential work. The Committee on Railway Accounts and Statistical Returns, 1909, reported that without statistics it is not possible, but with them it is possible, to ascertain train load, or wagon load and length of haul; as well as the transport effected per engine hour in passenger traffic and in goods traffic; also the average receipts per passenger-mile and per ton-mile; and the average density of traffic per mile of road and per mile of track².

¹ See above, pp. 452—3.

² See [Cd. 4697], § 45. Conferences of British railway men, and their professional journals, do much for the cooperative advance of knowledge. But there seems to be some grounds for the severe judgment of a competent critic that "the defect in the prevalent British statistical system is that the manager actually never knows what his neighbour is doing; he has no opportunity as the American manager has to whet his curiosity on the good performances, which somebody else is making. Consequently, improvements in British practice spread but slowly, whereas in America every efficiency-producing device is studied and imitated as soon as it makes itself apparent in the ton-mileage

APP. K, 4. It is now universally recognized that cost of service can be no more than one among several considerations, to be weighed together "by the exercise of a wise discretion" before reaching a conclusion as to the reasonableness and justice of any particular railway rate: but yet American railways have already "made limited application of the principles of cost-accounting to more than one-half" of their vast mileage for "internal corporate administrative purposes¹." And "an order was issued [by the Interstate Commerce Commission] effective as of July 1915, requiring all carriers, having operating revenues in excess of \$1,000,000, to classify each of the various items of disbursement relating to operating accounts, according to the relation which such item bears to the freight service or to the passenger and allied services of the carrier; rules being given for apportioning items of expense common to both classes of service, excepting as to certain items under maintenance of way and structures, which are for the present to be left undivided....It is expected that this class of information will be of assistance, not only in rate cases, but also in making comparisons of changes in operating costs from year to year, and among various railroads in a given year²."

It may be noted that an assumption that the cost of each service is known, underlies every suggestion that the charge for it is put at that point which is most advantageous to a railway from a purely business point of view. For, if the gross receipts of a railway from a certain traffic are only a little greater than its direct and immediate costs, a reduction of the charges for it might be unwise (except for combative purposes),

figures" (*Railroad Administration*, 1910, p. 229, by R. Morris, Managing Editor of the *Railway Age Gazette*, N.Y.). A good short account of uses of the ton-mileage statistics was read by Mr Wedgwood of the North Eastern Railway before the British Association in 1906 and printed in the *Economic Journal*, March, 1909. The English North Eastern Railway made rapid progress under the guidance of Sir George Gibb, who paid special attention to railway statistics; he is known to have owed much to the stimulation of Mr J. J. Hill, whose devotion to them is regarded by many as an important contributory to the success with which he overcame the obstacles that a mountainous, sparsely inhabited country opposed to direct railway communication between the upper Mississippi Valley and the Pacific Coast.

¹ B. H. Meyer, at the meeting of the American Economic Association, 1912.

² Report of the Commission, 1915, p. 44.

unless it greatly increased the traffic: while an expectation of even a moderate increase of the traffic would have made the reduction of charges remunerative, if the direct costs of working had been much below the present charges. Suppose, for instance, that a certain traffic yields £10,000 of gross revenue; of which £8000 are reckoned as direct or prime costs of moving, and £2000 are allotted for general costs and profits. Suppose that a reduction of charges by one-fifth would double the traffic: then the whole of the receipts, £16,000, would be swallowed up by prime costs, leaving nothing for general costs and profits beyond the economies on the mere direct costs of operation from an increase of the traffic. If however the prime costs, accurately estimated, were only £6000; then after the same change, under like conditions, there would remain £4000 for general costs and profits, in addition to these economies of work on a larger scale: and the reduction would be excellent business. These figures illustrate the dictum that "railway business must be unbusinesslike so long as prime costs are reached by mere guesswork and are liable to wide error."

5. *The small and indirect, but yet valuable, aid which a study of the capitalization of railways may afford in regard to the regulation of the general level of their charges.*

Thus we are brought back to the suggestion, made in Book II (p. 336), that the correct capitalization of a railway or other semi-monopolistic business is matter of larger public concern than that of an ordinary company. The State must in any case take all reasonable measures to protect investors against the fraudulent infusion of "water"; that is additions to the nominal capital of a company, which are not justified by corresponding *bonâ fide* payments into its exchequer: though, as a rule, excessive capitalization of a company injures only those who buy its securities. For, if it has no monopoly, those who buy its products are protected against excessive charges by the competition of similar products in open market.

The nation has, however, an interest in the capitalization of any important public service, which is required to possess stability, solidity, and power of expansion. If a railway issues securities

APP. M, 5. much in excess of its actual outlay, it is unlikely to earn enough to pay good dividends. This will tempt it to issue more securities, and pay its expenses partly out of capital: but such action will soon bring it into disrepute, and it will be unable to borrow more on good terms. It will perhaps stint outlay on repairs and renewals. It may probably wish to raise its charges, but be unable to do so directly; and, if so, it is likely to let its services deteriorate, and in other ways to make the public pay the penalty of its inflation.

British business generally is renowned for the soundness of its financial methods: but British railways are sometimes tempted to charge to capital account, expenditure that is required for keeping their plant abreast of advancing technique: though, since such expenditure only places them on a level with new railway enterprise, and makes no extension of their business, it is of a kind which would be generally charged to income by a "conservative" American railway. Every such charge to capital increases the difficulty of maintaining dividends at a high level in the future¹.

Some strong American railways, desiring to evade popular demands for lower charges, have kept their dividends down by charging many organic improvements and extensions to income. But, if they continue to prosper, and to act on this plan, their net incomes will rise to so high levels relatively to their capitalization that the public will at last demand concessions in their interest. On the whole, even strong American railways tend to increase their nominal capitals; and their weaker neighbours are tempted to do the same, because they are weak.

In view of these difficulties a law was passed by Congress in 1913 directing the Interstate Commerce Commission to report in detail as to each piece of railway property "the original cost to date; the cost of reproduction new; the cost of reproduction less depreciation; and an analysis of the methods by which these several costs are obtained, and the reasons for their

¹ Parliament has sanctioned nominal additions, without any real change, to the capitalization of British railways, amounting in the aggregate to £198,000,000. In consequence the average net earnings in 1912 were 3.51 per cent. on the capitalization, instead of 4.51 as they would have been on the actual investments. These additions were made publicly: and a few people recollect some that are of recent date; but nearly all are forgotten.

differences, if any." This direction is in harmony with the Supreme Court's definition of "reasonable rates," which had been accepted by the Commission, viz. that they are "such rates as will, on the whole, make a reasonable return on the property fairly and honestly dedicated to the public service." The Commission has accordingly thrown itself with energy into this inquiry; which is perhaps destined to be exceptionally arduous and instructive to economists. [It may also be of supreme importance to British statesmen, in case measures for some sort of unified control of railways, which have come into view since this was in print, should be developed.]

"Physical valuation" has been adopted as the name for the subject of the inquiry: and it conveniently gives warning that some elements of the whole problem to be solved lie outside its scope, and must be treated separately. For instance a new railway is not wholly exempt from the general rule that almost every business is likely to make some mistakes, before it attains the best adjustment of its resources to its work¹.

When the studies of the Commission have made considerable progress, it will probably be possible to arrive at an approximate judgment as to the relations between the total costs and the total charges of any particular railway that may fall under suspicion. Its original cost can be estimated roughly from the statistical history of the railway, and can be compared with similar estimates as to other railways: and its methods of administration can be noted; with special reference to the question whether fresh capital was raised to carry out simple improvements, the cost of which should have been defrayed out of income. Also, a direct comparison can be made of its charges

¹ This value due to a "trying out of the plant," or its adjustment of parts, called by engineers "adaptation or solidification" is one of the "intangible values," noted by Professor Ripley (*l.c.* II, p. 238) as lying outside Physical Valuation, which he describes at length. The general procedure of the Commission is indicated in its own Reports. Mr H. N. Hayes in the *Harvard Quarterly Journal of Economics*, argues that, though it is often impossible to get directly at the "original cost" of a public utility, yet an indirect route to it is available. For the ages of the units of expense being known, units of the same kind and age can be grouped together, and the prices paid for each unit in each year can be obtained from the books of the concern, or from other sources: but he admits that this method would not generally be available in regard to the cost of railway land (pp. 621 and 628).

APP. M, 5. as a whole, with those of other railways which have about equal facilities for obtaining a dense and regular traffic, equal costs for materials, etc. Some of these railways are sure to be managed efficiently and honestly: and they will serve as a touchstone for the rest.

In all such valuations it is difficult to decide what value to assign to railways' land, and especially such of it as is situated in the centres of great cities. It is said that the land needed for Paddington Station and its approaches cost only two million pounds; but that fifteen millions had to be paid fifty years later for the neighbouring Marylebone Station and its approaches: and the rise in value of the sites of some American termini has been much greater.

It may be added that, though the studies by the Interstate Commerce Commission in regard to railway capitalization have as yet made but little advance, it has seen its way in 1914 to allow an increase of five per cent. on the charges levied by the railroads between New York and Chicago; on the ground that, existing rates did not enable the weaker of those lines to obtain reasonable remuneration on their presumed capital; and "railways must live." In 1908 it had called attention to the fact that, the numerous holdings by railways of each other's securities, have caused the capital, on which the power of earning income might reasonably be claimed, to appear to amount to sixty-eight thousand dollars per mile; whereas only fifty-eight thousand dollars per mile of securities were in the hands of the public. It had pointed out also that, though these intercorporate holdings are not sufficient to give absolute control; yet, individual holders seldom vote, and the proxies given by them are not based on investigation: so that the intercorporate holdings being "in concentrated form, virtually dictate the policy of the corporations, whose securities are thus held"; with the result that vast systems of railways have come under the domination of the same group of financiers¹.

¹ This Report on *Intercorporate relations of railways* is a very instructive document. It starts from the position that "a single carrier in making a return of capital 'in the hands of the public' regards another carrier as one of the public....If however the problem be to state the amount of securities which are an actual or contingent claim upon the revenues of the country considered as a whole, the phrase 'in the hands of the public' must exclude all railway

Financial complications of this kind do not materially affect the relations between competition and monopoly in the British railway systems. British railway directors have the virtues, together with the defects, of their partial detachment from the speculative, as well as the technical, excitements of railway affairs. Most of them are well advanced in life: they have won the esteem of others by capable and upright control of large affairs; their pecuniary interests in the general prosperity of the country often exceed their personal interests in the finances of the railway, for which they are responsible. In short they are at least as incapable both of underhand intrigues and of indifference to the common good, as any body of men that can be found. It may be true that they have hitherto been inclined to adhere to well-trodden paths rather than venture boldly on new courses that hold out promise of advantage. But the importance and the resource of modern railway science are becoming recognized steadily, though slowly: and there is reason to hope that the general broadening of the scope of British education will ere long raise the alertness and resourcefulness of the supreme control of British railways to as high a level as that which has long marked its probity and public spirit.

holdings." Until 1908, no allowance had been made for this. The incident illustrates the extreme difficulty of rightly reading company statistics, even in cases where nearly all affairs are conducted in public.

The strategy of great railroads, 1905, by F. H. Spearman, contains a fascinating account of great campaigns in which Vanderbilt, Cassatt, Harriman, Hill, Gould and other men of Napoleonic genius for construction, and in some cases for destruction, won dominion and occasionally lost it. Illustrated by maps, it presents in short compass a general view of the more sensational episodes in American railway history, not easily to be obtained elsewhere.

In Vol. II of Ripley's *Railroads* will be found analytical accounts of various forms of pooling and combination, with their relations to Anti-trust Laws.

APPENDIX N

SOME AMERICAN INDUSTRIAL STATISTICS

APP. N. *The recent increase in the size of the representative industrial establishment in America*¹.

The American Censuses from 1850 to 1880 relate to industrial establishments of all sorts, including those in "hand and neighbourhood industries" (or as we may say shortly, though not quite accurately, "workshops industries"), as well as in manufactures properly so called. The Census of 1890 gives returns on the old plan; and also in regard to factories only—the plan which has been followed since then. Consequently the most important comparisons for our purposes are between the years 1900 and 1910: though earlier figures have some useful suggestions.

The unit throughout is an "establishment": which is generally "a separated plant or mill": its size suggests the command possessed by it of the economies of *production* on a large scale. Economies of *marketing* are often better represented by statistics of "businesses": but on the whole, the establishment is doubtless the best unit².

The table given below³ shows that the 208,000 establish-

¹ This Appendix is attached to p. 511.

² Further the boundaries of an establishment are more definite and ascertainable by Census officers than those of a business: and, as one important concern of a Census is with the local distribution of industries, confusion would have been introduced by grouping together plants in different places. But "two or more plants operated under a common ownership, or for which one set of books of account is kept," are sometimes regarded as a single establishment. (*Abstract of the Census of 1910*, p. 435.)

³ The following is part of a table in the *Abstract of the Census of 1910*, p. 439:

ments engaged in manufacture in 1900 had increased to 268,000 in 1910: but meanwhile the total value of their output had increased from \$m 4,831 to \$m.8,529: that is their average output had increased from 232,000 dollars to 318,000: if we go back to 1850, when workshops etc. were reckoned in, we find the average output of an establishment to have been less than 4,000 dollars.

The wages bill of factories etc. increased between 1900 and 1910 considerably faster than the number of workers; but not nearly so fast as the value of the total output of products (which of course includes the cost of the material used); or of the net product (which is the value added to the material by the process of manufacture). This difference is mainly to be accounted for by the increased use of expensive plant, which is indicated by the fact that the horse power used had increased meanwhile from 10 to nearly 19 million units; that is, at almost the same rate as the capital employed. But prices were rising fast during this period and therefore the increases in total and net real output were less than is shown by these figures. The years 1900 and 1910 were years of climax: the Census figures in regard to manufactures belong to the years 1899, and 1909, preceding the nominal Census years¹.

Census year	Establishments (thousands)	Capital (million dollars)	Wage earners (thousands)	Wages (million dollars)	Value of products (million dollars)	Value added by manufacture (million dollars)
1850	123	533	957	237	1,019	463
1880	254	2,790	2,732	948	5,370	1,973
(1900)	(512)	(9,814)	(5,306)	(2,320)	(13,000)	(5,657)
1900	208	8,975	4,712	2,008	11,407	4,831
1905	216	12,676	5,468	2,610	14,794	6,294
1910	268	18,428	6,615	3,427	20,672	8,529

The figures in brackets for 1900 in the upper line relate to manufactures in the old broad sense of the term, and are therefore comparable with those for 1850 and 1880: those in the lower line relate to manufactures in the narrow sense, and are comparable with those for 1905 and 1910.

¹ The returns as to capital have always been untrustworthy: and indeed General F. A. Walker, who put the Census of 1880 at a single bound near to the very high level since attained by it, thought that they should not be

APP. N.

These statistics have an interesting bearing on the influence, which the growth of giant businesses exerts on the relative demands for capital and for labour, and on the character of the work required of labour. The two sets of figures from the Census of 1900, given in the table of figures on p. 847, indicate that the cost of materials bears about the same ratio to the total value of the product in workshops as it does in factories. This suggests that the stages through which material passes in very small establishments are so small, that they can be worked by manual labour with but slight assistance from plant, as easily as the larger stages worked by factories with more elaborate plant.

But a comparison of factories and other considerable establishments of various sizes shows that the cost of material is less than half the value of the finished product in rather small establishments; about equal to it in medium factories, with an annual output of \$20,000 to \$100,000; and about two-thirds of the whole value in plants with output of a million dollars and over. One reason seems to be that very large factories are chiefly concerned with work which can be done by expensive machinery, aided by a comparatively small amount of human effort: much of it does not require to be highly skilled; and the total cost of each process of manufacture is therefore rather small.

Industrial establishments having a less output than a \$100,000 accounted for 20·7 per cent. of the whole in 1904;

published at all. They are perhaps a little less inaccurate in some directions now, than they were then: but their ambiguities have increased with the great increase in the number of establishments in the same ownership.

The following index numbers for the wholesale prices of commodities, are taken from *Bulletin* 200 (A.D. 1916) of the Bureau of Labor Statistics, p. 17: they show, of course, a less rapid rise in the prices of manufactured than of raw commodities.

	1898	1899	1900	1901	1908	1909	1910	1911	1915
Raw commodities	60	65	71	71	82	90	94'	86	100
Manufactured commodities }	70	75	80	78	89	93	96	90 ^c	100
All commodities...	65	70	75	74	85	91	95	88	100

but only for 17·8 in 1909. In the same few years the share of establishments with output between \$100,000 and \$1,000,000 fell from 46·0 to 43·8 per cent.; while that of giant businesses with not less than \$1,000,000 output rose from 38 per cent. to 43¹. APP X.

Of course some large establishments had many more than 500 wage earners; and several such establishments had been set up as part of the same business unit. Business units so large were inclined to compete fiercely; then to enter into parley, and agree on terms of peace in regard to one another, supplemented perhaps by arrangements for the discomfiture of competitors who could not be brought into the agreement. Next, the alliances were strengthened and fortified: and, if they thus came into conflict with the law against combination in restraint of trade, a way out was found by amalgamation. But that did not lessen the dangers which they threatened to the public interest: it merely altered their form and thus called for new investigation and regulation.

¹ *Abstract of the Census of 1910*, p. 464. The corresponding figures for 1900 are not comparable, for they follow the old plan of including workshops etc.: indeed nearly half of the 512,254 establishments to which they relate, represent hand trades; and "in 68,523 of these all the work was done by the proprietor without hired assistance." (*Report of Census of 1900*, Vol. VII. p. LXXII.) The neglect of this fact seems to have been the cause of some important statistical errors.

APPENDIX O

NOTES ON EMPLOYMENT IN BRITISH AND GERMAN STEEL INDUSTRIES

APP. O. *A comparison of the steel industries of Britain and Germany, with special reference to the pleas that Germany's cartel and fiscal policies in association have benefited the people.*

[The greater part of this Appendix was in print before the World-war: and the present tense, used in it, refers to the decade preceding the war. It takes no account of a suggestion, which has recently been made, that some sacrifice of general interests to the advancement of the heavy steel industry was deliberately made by the German Government, in view of the strength which predominance in that industry would afford in the great war, which it was preparing]

Reference may be made at starting to the summary account given above (III, ix, 4) of the numerous causes, which united to give the German heavy steel industry a more rapid development than the British towards the end of last century. The chief of them were sudden access to abundant iron ores, suitable for making good steel by a new method: technical skill and alert energy on the part of Germans in using this method: ill-informed opposition to the method by the British Government, and indifference on the part of British iron-masters: and the great advantage which a young industry, not encumbered by obsolete plant, has over an old industry, when the time has come for recasting old methods. Nevertheless German policy has resulted in causing those, who make her steel, to receive low wages; and those Germans, who buy her steel, to pay dearly for it.

The tasks involved in cartellization are appropriate to the temper of the German people. The long hours of more or less intensive work, to which they are accustomed, enable them to attend numerous discussions without difficulty: the discipline,

to which they have been seasoned in military service, inclines them to submit easily to cartel regulation; and, what is perhaps equally important, the semi-military organization of cartels is well adapted to the purposes of an autocratic rule, which regards peace as the time of preparation for war. Moreover an autocratic Government can exert certain kinds of discipline, which are not congenial to the temper of a self-governing people; and would, partly for that reason, involve lengthy discussions, and obstruct the proceedings of Parliament, if attempted in Britain. For instance, a cartel, which offends the German Government, may find that the charges for the railway traffic, in which it is specially interested, are quietly raised: or those on important rival products may be lowered, or the Protective tariff may be modified to its disadvantage: no such discipline would be tolerable in Britain¹.

There is another reason for the bias in favour of cartels that is shown by a Government that is largely under the control of a wealthy minority. It is, that cartel policy is greatly dependent on the aid of a Protective tariff, which tends to enrich many of those who are already rich; though it lowers the purchasing power of incomes generally, and especially those of the poorer classes. This again is an advantage from the point of view of German military autocracy: for the wealth of the rich is more accessible to the tax collector, than are the wages of the working classes, when once the taxes on ordinary necessities have been pressed as far as they can well go: and the relatively low standard of comfort enjoyed by the German working classes in time of peace has lessened the expenditure needed for maintaining a large army in peace and in war. These injurious influences are apt to be obscured by invalid arguments, one of which calls for attention here. It is to the effect that Germany's system must be advantageous to her working classes, since it enlarges the funds which cartellized industries have at their disposal for the employment of labour: and it is suggested that Britain might therefore advantageously follow her example.

This suggestion seems based on exclusive attention to the interests of some industry that is being overridden in its own

¹ These remarks may be considered in connection with pp. 633—4 above.

APP. O. market by the foreigner; and to ignore the interests of other British industries, whose alertness enables them to get the better of rivals abroad. No doubt increased employment in the former industry can be given by shutting out its rivals: but, for every million pounds worth of increased employment so given by it, about a million pounds less employment is likely to be given by those industries whose exports have provided Britain with her power of purchasing imports. Capital will gradually shift from those industries, which are doing most to make the country strong; and will pass to those, to which she has so far owed less. Of course they may be "nascent" industries: or they may be such as can properly receive financial aid (direct or indirect) from the State for military, or other exceptional reasons. The easiest, though not the best, way of doing this may be to enable them to sell their products at higher prices and give increased employment, in consequence of the partial exclusion of rival imports: but such action will, as a general rule, only alter the distribution of good employment, and will not increase its total amount. Therefore, unless this shifting of employment is required for some exceptional reason of high policy, its net effect is likely to be an injury to employees as a body.

Protective tariffs and cartel-organization enable the German steel industries to obtain higher gains from their outputs of hardware, textile machinery etc., *when destined for use by Germans*, than they otherwise could; and the German people may perhaps derive a minute indirect gain from this. But that gain is generally only a small part of what has been artificially taken from them. The Steelworks Union is indeed able to boast that it divides out the benefits of the Protective tariff equitably among all steel "users": but, as has just been argued, that is true only with regard to those capitalist users, who apply steel material in business. Those who use the steel products as utensils in their houses, or buy products made by steel plant, have no place in this arithmetic.

The German people have indeed some relief in regard to the transport industries. For the Government has a special interest in the supply of steel for railways and ships. It buys steel for railways on advantageous terms. And, it allows steel for making ships to be imported freely; by which excellent provision it has

conferred great benefits on the people. If that provision were extended generally, Germany would obtain the necessaries of life on the same advantageous terms as Britain does; and the purchasing power of wages would be at least as high relatively to their money value as in Britain. Not long ago it was higher: but now it is much lower in consequence of that Protective system, of which German cartel policy is a part¹. APP. C.

¹ An American onlooker says:—"The English workingman gets higher wages than the German workingman. All the salaried men in English factories get higher wages, and work shorter hours, than the salaried men in German factories. The English agents in foreign parts not only get higher salaries, but insist on week-end holidays and on having several afternoons off during the week in order to play golf and tennis; whereas the German agent works every day and Sunday." Professor Carver, *Principles of Political Economy*, 1918, p. 347. The President of the North German Steamship Company, referring in Hong Kong to the question how it was that Germans had already (in 1910) obtained nearly half the trade of the port, though the port belonged to Britain, called attention to the early desertion of the English offices; and added, "But in some of the German offices those lights will be burning up to nine o'clock. That is the answer. We Germans are winning the trade of the world because of our capacity for, our willingness to *work, work, work*" (*The Times*, 21 March, 1919).

The Report of the Board of Trade on *The cost of living in German towns*, 1908, p. lii, sums up its results as to the comparative purchasing power of wages in Germany and England in the building, engineering and printing trades, by saying that "the German rate of money wages per hour is about three-quarters of the English rate: and the cost of rent, food, and fuel nearly one-fifth greater than in England": that is, English real wages are more than half as much again as German. The second half of this statement "is based on the English standard of consumption": the difference would have been rather less, if based on the German standard.

This result is confirmed by the evidence published in several Reports of the Tariff Commission. For instance, in that on *The engineering industries*, 1909, many witnesses referred to the rates of money wages in England and Germany: every one of them said that the rates per week were higher in England, and the hours of work shorter; and twelve gave numerical estimates of the difference. Three of these put it low: an equal number put the money wages per hour in England twice as high as in Germany. The average of all the estimates seems to coincide with the Board of Trade estimate, quoted above, that before the World-war the English money rate per hour was one-third greater than the German. *The Report on the shipping and shipbuilding industries* [Cd. 9092] 1918, p. 27 lays stress on the fact that in the steel industry "competition with Germany was, in the view of the steel makers, rendered difficult by the low wages prevailing there." Of course uniformly high wages throughout all industries in a country do not materially affect the *relative* values of her imports and exports of manufactured products: and therefore they have less influence on the course of trade than is suggested by the consideration of one industry alone. But this does not affect the authority of the Committee on the matter of fact.

APPENDIX P

COÖPERATIVE AND COLLECTIVE ORGANIZATION OF INDUSTRY: METHODS PROVED AND UNPROVED

APP. P.

The great services to progress rendered by cooperation and copartnership ; and their limitations¹.

Experience has partly moderated and partly confirmed the bright hopes that were entertained in this and other countries, about half a century ago, to the effect that cooperative production and copartnership together would gradually develop a set of working class leaders with wide business experience, and well able to judge what business risks can advantageously be carried, by working men, either separately or in "copartnership" with experienced business men: and what must remain over for management by business men alone, or by the State. In the last two generations much has been learnt as to what can be done even under present conditions, and what could be done under a nearer approach to ideal perfection of human nature.

To begin with, the provinces of cooperative production and of production under some copartnership arrangement have been in a measure marked out. "Cooperative" undertakings in the technical sense of the term, that is those which are entirely in the hands of the manual labour classes and other people of small means, are seldom able to engage successfully in industries other than those of marketing staple goods for general consumption, especially by the working classes: and in the production of some kinds of these goods².

Copartnership has a wider scope. For it leaves the chief risks of the business concerned to men who have had experience in selecting risks, and abiding by the results of their selection: and

¹ This Appendix is associated with III, xiv.

² See above, pp. 293—5.

yet it gives to employees a substantial direct interest in the prosperity of the business; and a share in its direction, which places them in some respects almost on a level with their employers.

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But the plan has some disadvantages. A business which has special methods of production, or special knowledge as to favourable markets, may fear that working men directors will be drawn on, without evil purpose, to communicate to comrades information, apparently unimportant, but yet likely to help any rival business that it may reach by indirect routes. And if the working man director is reticent, his comrades may suspect him of want of loyalty to the collective interests of his class. In vain do advocates of copartnership urge that the interests of employers and employed are closely allied; and that an exclusive loyalty to one side is antisocial: the fact remains that many trade-unionists, including nearly all who are of militant temper, look with some suspicion on copartnership¹.

Thus it has resulted that those copartnership schemes which have attained a lasting success have generally owed much to men who have anticipated by a generation or more that attitude to socio-industrial problems, which has become prominent in the last few years and has found a partial expression in the Whitley Report. They seem to have all been endowed in exceptional degree with the master faculties—sympathy, imagination, strength and tact².

¹ An extreme instance may be quoted from a manifesto issued on behalf of National Guilds, as to which something will be said a little later on: "Is there any objection to profit sharing and collective partnership with the men, not collectively as a Union, but individually?" "Yes: for every man so singled out is spiritually transferred from the side of labour to the side of capital. His concern is no longer to abolish the wage-system for himself, his fellows, and the nation at large, but to obtain all the profit he can extract from it." (Quoted by Bechhofer and Reckitt, *The meaning of National Guilds*, p. 295.)

Lord Leverhulme, writing with exceptional knowledge from the opposite point of view, throws part of the blame for the slow progress of the movement on suggestions that the adoption of copartnership by an employer is "generous" or "philanthropic." (*The Six-hour day*, p. 105.) Its true claim to be welcomed by employees, and therefore to succeed, is that it invites them to contribute to its efficiency such elements as lie within their power as comrades. There may be an element of benevolence in comradeship; but it must be unconscious: if it is obtruded, the verdict to be passed on it is *felo de se*.

² The Labour Commission of 1891—4 was much occupied with the aims and difficulties of copartnership. One of its members, Mr Livezey, was working out

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There seems to be but little force in an objection, sometimes raised against profit-sharing, to the effect that it gives an advantage to some classes of employees, relatively to others: for as a rule that advantage has been earned. Nevertheless there is something to be said for the proposal that, where practicable, the profits made in an industry in each year (or half year) should be ascertained; and some definite percentage of the whole be paid into a common fund, to be divided among all the workers in the industry in proportion to the wages earned by them in that period¹.

The fact that cooperation and profit-sharing have done much excellent work is evidence that human nature is ready for considerable advances towards an organization of industry on a plan more generous and under a less rigid cash-nexus than at present. But the fact that progress on these lines has been less rapid and continuous than had been hoped by many, suggests that further movements in this direction must be cautious as well as resolute: that each advance must be well established and consolidated before making new calls on the chivalrous spirit that lies deep down in human nature; and that the greatest error which reforms can make is to move so fast as to induce reaction. These considerations seem to have been insufficiently considered by advocates of speedy movement towards the setting up of "National Guilds."

an excellent example at the South Metropolitan Gas Company's works, which reckons two artisans and one clerk among its directors: see C. R. Fay, *Copartnership in Industry*, 1913, p. 105. In 1917, 64 English Copartnership Productive Societies made a profit of over twenty per cent. on a capital of £800,000, and paid about a sixth of that as Dividend on wages. In Scotland the United Baking Society made a profit of £80,000 on a capital of about £600,000 and paid a Dividend on wages of over £7000. In connection with these matters, see above, pp. 289—295 and 319, 320.

¹ This suggestion was made by Professor Cannan to the Coal Industry Commission in the course of a powerful argument against nationalization of the mines (see *The Times*, 25 April, 1919). Some of the opportunities, which profit-sharing plans afford for suggestions from employees to employers, can now be obtained through Works Committees. Joint Industrial Councils may not only consider broader questions of organization than those that lie within the scope of a single business: they may also tend to promote effective cooperation among businesses in such cases as that of several adjacent mines, which could economize shafts, internal transport, etc. by agreement or fusion.

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