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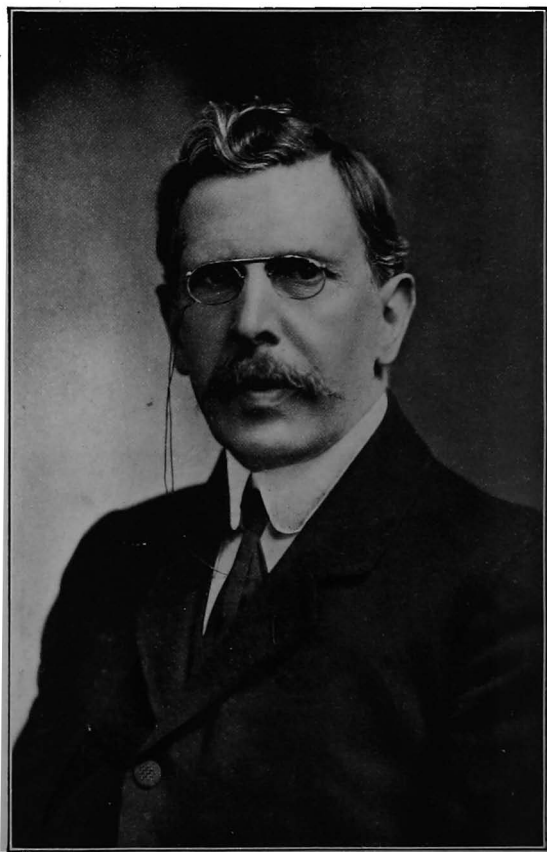
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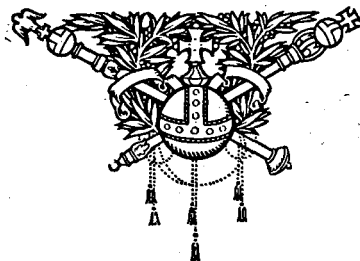


W. H. Dixon



INDUSTRIAL
GERMANY

by
WM HARBUTT DAWSON



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PREFACE

THE call for this book may be taken as evidence of continued public interest in the industrial movements of a country which, by general consent, is regarded as Britain's most serious rival in the markets of the world, and which itself claims to be so regarded. I have had the greater satisfaction in writing the book, since the task has given me the opportunity of calling attention to certain important measures of quite recent date devised for the development of Germany's natural resources and the increase of its industrial efficiency. Some of these measures well deserve closer study than it has been possible to give to them in these pages. It is shown, for example, how the railways and waterways have been brought into a state of efficiency and made to minister to the interests of industry and commerce; how in furtherance of the same interests a large colonial empire has been created; how an attempt has been made to solve the problem of cheap power for industrial purposes by mobilising latent natural forces—water and furnace gases, coal, lignite, even peat—and converting them in large central works into electricity; how the organisation of industry has taken new and more efficient forms, as exemplified by amalgamation, fusion, and the syndicate; and how the home industries have been preserved in town and countryside. Germany affords, indeed, a stimulating example of a country

solicitous for the development of its natural resources and eager to adapt its economic arrangements to changing needs.

While there has been a great industrial awakening in this country during late years, much may still be learned from the methods and the example of other countries. Nevertheless, I do not believe that the British manufacturer will be spurred to greater energy and more willing zeal by continually nagging at him. Hence, as far as possible, I have abstained from international comparisons, preferring simply to state plain, pertinent facts, and to allow the interested reader to attach to these facts his own moral and to derive from them whatever advantage he can and will.

As in earlier books on kindred subjects, so in this, I do not take a pessimistic view of Britain's industrial and commercial outlook, being persuaded that in this field the courage, resource, and enterprise of the race are capable of as great achievements in the future as those which belong to the past. The essential thing is to recognise frankly and betimes that many of the preferential conditions which favoured this country up to forty or fifty years ago exist no longer, and that henceforth the race will be to the swift and the battle to the strong.

W. H. D.

October, 1912.

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Industrial Germany

CHAPTER I

POPULATION AND OCCUPATIONS

There are two outstanding facts the understanding of which is indispensable to a right estimate of the economic significance of modern Germany. One is the great increase of the population since 1871 and its continued rapid increase to-day; the other is the growing dependence of the population upon industrial and mercantile pursuits. The census of December 1, 1910, showed an Empire of 64,926,000 inhabitants, as compared with 60,641,000 five years before. In spite of the steady fall in the birth-rate, the absolute increase was the largest yet recorded in a similar intercensal period, though the percentage increase was smaller than in the two preceding periods. The progressive growth of population since the establishment of the Empire will be seen from the table on page 8.

INDUSTRIAL GERMANY

Census Year.	Population.	Increase.	Increase per cent.
1871	41,058,792	—	—
1875	42,727,360	1,668,568	4·06
1880	45,234,061	2,506,701	5·87
1885	46,855,704	1,621,643	3·59
1890	49,428,470	2,572,766	5·49
1895	52,279,901	2,851,431	5·77
1900	56,367,178	4,087,277	7·82
1905	60,641,489	4,274,311	7·58
1910	64,925,993	4,284,504	7·07

It is noteworthy that the whole of the increase during the five years 1905 to 1910 was due to excess of births over deaths, the addition owing to that cause being 4,444,408. The fact that the emigration exceeded the immigration by 159,904 explains the reduced net increase of 4,284,504. It is also interesting to know that the natural increase of the male population has for a long time been greater than that of the female. Females still exceed males, yet to a less degree than formerly, owing to the fact that mortality is decreasing less amongst them than amongst males. In 1871 there were 103·7 females to every 100 males, and in 1885 the proportion was 104·3:100; but since then the disparity has fallen at every census until in 1910 it was 102·6:100. The tendency is not without importance in the case of so large a population depending to an increasing degree upon industrial employment.

The effect of the large growth in population

since 1871 is that the ratio of inhabitants to area has increased from 196 to 310 to the square mile. Taking the larger States and the Prussian provinces only, the greatest density is shown by the Kingdom of Saxony, viz., 830 inhabitants to the square mile, the Prussian provinces of Rhineland and Westphalia with 683 and 529 respectively, the Grand Duchies of Hesse and Baden with 489 and 368 respectively, Alsace-Lorraine with 334, the Kingdom of Würtemberg with 323, and the Prussian provinces of Hesse-Nassau, Silesia, and Saxony with 366, 336, and 316 respectively. In all these cases a strong industrial element in the population explains the relatively high density.

Conversely the important States and provinces with the smallest density of population are the essentially agricultural States of Mecklenburg-Strelitz with 94 inhabitants to the square mile, Mecklenburg-Schwerin, 126; Waldeck, 143; and Oldenburg, 194; and some of the agricultural provinces of Prussia, *e.g.*, East Prussia, 140; Pomerania, 148; West Prussia, 173; and Posen, 188. Prussia as a whole has a density of 224 inhabitants to the square mile and Bavaria one of 234.

The growing increase of nearly a million

a year almost exclusively swells the population of the larger urban districts. This will be seen from the following table showing the proportions of the population resident in towns of different size at four census periods:—

		Number.	Population.	Per Cent.
(a) 'Large' towns (100,000 inhabitants)	1871	8	1,968,537	4.8
	1875	12	2,665,714	6.2
	1900	33	9,120,290	16.2
	1910	48	13,823,348	21.8
(b) 'Medium' towns (20,000 to 100,000 inhabitants)	1871	75	3,147,272	7.7
	1875	88	3,487,857	8.2
	1900	194	7,111,447	12.6
	1910	223	8,677,955	13.4
(c) 'Small' towns (5000 to 20,000 inhabitants)	1871	529	4,588,364	11.1
	1875	592	5,132,971	12.0
	1900	864	7,585,495	13.5
	1910	1028	9,172,333	14.1
(d) 'Rural' towns (2000 to 5000 inhabitants)	1871	1716	5,086,625	12.4
	1875	1636	4,922,781	11.5
	1900	2269	6,815,853	12.1
	1910	2441	7,297,770	11.2
Total urban population	1871	2328	14,790,798	36.1
	1875	2328	16,209,523	37.6
	1900	3360	30,633,075	54.3
	1910	3740	38,971,406	60.0
(e) Rural communes	1871	—	26,219,352	63.9
	1875	—	25,517,837	62.1
	1900	—	25,734,103	45.7
	1910	—	25,954,587	40.0

The increase of the 'large' towns, i.e. towns with a population of 100,000 or over, is very striking. In 1871 there were only

eight towns of this size, but the census of 1910 showed the number to be forty-eight, and several other towns were about to cross the line. In 1871 these 'large' towns held 1,968,537 inhabitants, or 4·8 per cent. of the entire population; in 1910 they held 13,823,348 inhabitants, or 21·3 per cent. of the whole.

Taking a longer survey, less than fifty years ago the Grand Duchy of Baden was predominantly agricultural in character, and little more than one-quarter of its population lived in towns; to-day the population is equally divided between town and country.

The principal loss by migration takes place in certain purely agricultural districts, or districts with a population which follows more or less precarious industrial occupations in conjunction with agriculture. During the last intercensal period the loss in the Prussian province of West Prussia amounted to a yearly average of 10·7 per 1000 of the population as compared with 8·4 per 1000 in the preceding five years. The loss in East Prussia was 9·4 per 1000 (as against 8·8), in Pomerania 8·9 per 1000 (as against 7·5), and in Posen 8·6 per 1000 (as against 9·6). In many parts of agricultural Bavaria the loss by migration is also heavy and is increasing, and the same thing applies to certain districts of Würtem-

berg and Alsace, to Mecklenburg-Schwerin, Anhalt, Brunswick, Saxe-Meiningen, Saxe-Altenburg, and other small States of Central Germany.

During the period 1840 to 1905 the province of East Prussia lost by migration a population of 633,500, Pomerania a population of 668,900, Posen one of 790,300, and Silesia one of 599,100. Bavaria similarly lost a population of 699,200.

On the other hand, the districts which were being developed on industrial lines increased their populations by immigration enormously during that period—Berlin by over a million, the Kingdom of Saxony by 826,200, the Rhine province by 343,000, and Westphalia by 246,100, in each case independently of natural increase. As an illustration of the way in which population migrates from the agricultural to the industrial districts, the occupation census of 1907 showed that of 1,535,251 male industrial workers enumerated in the Prussian provinces of Rhineland and Westphalia 112,591 were born in the agricultural provinces of East Prussia, West Prussia, and Pomerania, and 102,841 in the agricultural provinces of Posen and Silesia; while altogether 529,541, or one-third of the total, were born in other parts of the country.

The workmen of the south, of Bavaria, Würtemberg, and Alsace-Lorraine, and even the Saxons of Central Germany, on the other hand, do not so readily move far away from home, and least of all into Prussia; not simply because their own States are able to retain them, but because life in the more strenuous north is less congenial.

When the Empire was established in 1871 Germany could fairly claim to be regarded as an agricultural State in the sense that Russia or Austria still is to-day. That event heralded a great industrial awakening, yet for a long time agriculture held its own. Now industry is steadily gaining ground, and although the absolute number of inhabitants dependent upon pastoral occupations—in the main, agriculture and forestry—is still as large as ever, there has been a considerable decline in the ratio to the entire population. In 1882 agriculture still claimed to be the support of 42·5 per cent. of the population, in 1895 the proportion was 35·8 per cent., but in 1910 it was only 28·6 per cent. On the other hand, while the proportion of the population dependent on industry and mining was 35·5 per cent. in 1882, the proportion in 1895 was 39·1 per cent., and in 1910 42·8 per cent. Similarly the

proportion of the population dependent upon trade and transport increased during the same periods from 10 to 11·5 and 13·4 per cent.

The absolute numbers of persons engaged in these three great divisions of national enterprise, together with dependents and servants living with them, at the dates of the three occupation censuses were as follows:—

Occupation Census Year.	Agriculture and Forestry.	Industry.	Trade and Transport.
1882	19,225,455	16,058,080	4,531,080
1895	18,501,307	20,253,241	5,966,846
1907	17,681,176	26,386,537	8,278,239

If an analysis be made of occupied persons only the figures are equally significant. In 1895 the number of persons employed in agriculture, forestry, and fishery was 8,292,692, and in 1907 it was 9,883,250; the corresponding numbers for industry and mining were 8,281,220 and 11,256,254, and for trade and transport 2,338,511 and 3,447,626. While during this period of twelve years the proportion of all occupied persons employed in agriculture fell from 37·5 to 35·2 per cent., the proportion of those employed in industry and mining increased from 37·4 to 40 per cent., and of those employed in trade and transport from 10·6 to 12·4 per cent. Industry, trade, and transport together in

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1907 employed 4·4 per cent. more of the occupied population than in 1895. While during this period the population increased by nearly 20 per cent., the number of persons employed in industry and trade increased by 40 per cent. The numbers occupied in some of the principal industries at the two dates and the increases per cent. were as follows :—

Industry.	1895.	1907.	Increase.	Incr. per cent.
Mining, smelting, and salt works	536,289	860,903	324,614	98
Metal working Machines, instru- ments, and apparatus	639,753	937,020	297,267	46
Chemicals	582,672	1,120,282	537,610	92
Stones and earths	115,231	172,441	57,210	50
Textile	558,286	770,563	212,277	38
Wood working	993,257	1,088,280	95,023	10
Paper	598,496	771,059	172,563	29
Transport	152,909	230,925	78,016	51
	230,431	404,768	174,337	67

Industry and trade to-day directly maintain a population of some 34½ millions, or more than half the entire population of the Empire. It is to these sources of occupation and not to agriculture that the nation has henceforth to look for the support of the yearly increase, now amounting to little less than a million, yielded by a high birth-rate, a falling death-rate, and the virtual absence of emigration.

Incidentally a notable feature of German social organisation may be mentioned here; viz., the large extent to which subsidiary occupations, particularly of an agricultural character, are followed. The occupation census of 1907 showed that of 11,256,000 persons who, following industrial occupations (mining and building trades included) as a primary source of livelihood, 1,735,000 had a secondary source of subsistence, and in 1,451,000 of these cases this source was agriculturé. Of 3,478,000 persons engaged primarily in trade and transport, 484,000 had a secondary source of subsistence, this being agriculture in 362,000 cases.

The development of industry finds a striking reflection in the diminution of emigration. So long as Germany continued to be more exclusively an agricultural State a large part of the annual increase of population was compelled to seek employment abroad. Thirty years ago Germans were emigrating at the rate of 200,000 a year, and until 1895 Germany regularly lost more by emigration than it gained by immigration. During the period 1851 to 1895 the net loss on balance was nearly four and a half millions, and in the three quinquennia of maximum emigration, 1881 to 1895, one and three-

quarter millions of people left the country. Then came a turn of the tide, and during the next ten years there was a net gain of 147,000. Although there is now a loss on balance of emigration over immigration it is so slight as to be negligible, and is barely one-tenth of the loss suffered in the early 'eighties of last century. In 1881, when the population was $45\frac{1}{2}$ millions, the emigration was 221,000, or nearly 5 per thousand; in 1910, with a population of $66\frac{1}{2}$ millions, the emigration was 22,690, or 0.35 per thousand.

Not only do Germany's expanding industry and commercial enterprise keep abreast with the growth of population, but industry and agriculture together provide employment for an enormous alien labour force. The occupation census of June, 1907, showed that there were 800,000 foreign work-people of all kinds in the country. In all probability, however, the number was understated. For example, while the number of Italians was given as 147,000, a report of the Italian commercial *attaché* in Berlin, dated May, 1911, estimated the number at 180,000, while the Italian emigration statistics also show the latter number to be settled in Germany.

Further, it is impossible that the occupation

census could have included all the alien labourers who from the early spring forward cross the eastern and south-eastern frontiers of Germany by the hundred thousand, and spread themselves over the rural districts of the north, which largely depend upon them for the farm work of six or eight months of the year. These labourers are admitted only in virtue of legitimation cards, for the issue of which a network of registry offices has been set up along the Russian and Austrian frontiers. At these agencies their places of destination are fixed, for they are not allowed to roam about the country at will, and when the last work of the harvest is done they are required to return to their homes. It is estimated that at least four hundred thousand foreign labourers hire themselves in this way to German estates and farms every summer.

A large proportion of the settled aliens—nearly 60 per cent. of whom are males, but in the case of the Italians 70 per cent.—are employed in unskilled work. The occupation census of 1907 showed that 125,000 were employed in the building trades, 77,000 in mining, 69,000 in the stone and earth industries (including quarrying and cement making), 46,000 in certain of the textile trades, 44,000

in the metal and machine trades, and 22,000 in the clothing trade.

Without the Poles from the east of Prussia, and the aliens from West, East, and South Europe, most of the collieries in Westphalia would be closed. Of 387,000 miners employed at the present time in the Düsseldorf, Münster, and Arnsberg government districts alone, 135,000 came from the eastern provinces of Prussia and were overwhelmingly of Polish race, while 30,000 more came from foreign countries. In some districts 50 and 60 per cent. of the mining population are either of Polish or foreign extraction, and there are collieries more than one-fourth of whose work-people are aliens. It is estimated that the German mining industry as a whole now employs about 100,000 alien work-people, chiefly of Austrian, Italian, Dutch, and Russian nationality.¹

¹ Replying to a question in the House of Commons some time ago, the Home Secretary gave the following estimate of the number of aliens employed in the regular work of the coal mines of Great Britain:—

Scotland.—Roughly about 2400, of whom the great majority are Poles.

Newcastle.—A few hundreds altogether.

Durham.—None underground; a very few above ground.

York and North Midland.—So small as to be negligible.

Manchester and Ireland.—Thirty-seven, of whom thirty-four are Poles.

Liverpool and North Wales.—Eighty-eight, of whom eighty-five are Poles or Lithuanians.

South Wales.—In four collieries in Brecon, eighty-five aliens, of French, Spanish, Portuguese, and German nationalities.

Midland and Southern.—So small as to be negligible

There is no sentimentality in the treatment of alien workpeople. They are tolerated because they are useful and necessary, and when they are no longer needed they are bidden to go. The Essen Chamber of Commerce puts the matter candidly and bluntly when it says, 'It is matter for satisfaction when people without an assured subsistence or without legitimation, or political suspects, are at once expelled the country.' It might have added, in ample justification of that policy of placing national interests first, that there is still one European country where all such persons are always offered a home and a welcome, even when its own labour market is overstocked.

The housing of these foreign labourers is a serious problem, and it cannot be said that the problem is solved always satisfactorily. As it is impossible to find houses for all of them, they are often lodged in factory boarding-houses if employed in the towns, or in large sheds or bothies if employed in the country. Such accommodation as is afforded them sometimes forms part of the agreed remuneration, and simple board or an allowance of food is often added, particularly when they are located in rural districts.

CHAPTER II

NATURAL RESOURCES

MANY causes have helped to bring about Germany's rapid advance into the front rank of industrial nations, but amongst the foremost is its possession of valuable stores of mineral wealth, and of capital wherewith to develop them. Of all European countries it has the largest known reserves of coal. The principal coalfields are those of Rhineland and Westphalia, Upper Silesia, and the Saar district, which together furnish 90 per cent. of all the coal output of Germany, and employ the same proportion of the coal-mining population, while fields of minor importance are found in Lower Silesia and Saxony.

Of the three main sources of supply the Ruhr basin takes the first place. Sixty years ago the coal production of this basin was two million tons annually; it is now 89 million tons, and is increasing every year. It is estimated that the coal measures of the Ruhr basin alone will still yield 30,000 million tons, which at the present rate of output would supply the needs of all Germany for several centuries.

Thanks to the nearness of the coalfield to

the Rhine, cheap water freightage opens to the Ruhr coal an extensive and receptive home and foreign market. The greater part of the coal exported from Germany to Belgium, Holland, and France leaves the country by that river, while much of the home trade is also done by way of the Rhine and the waterways connected with it. The building of the Central (Mittelland) Canal will open up larger markets in the east, and will to some extent neutralise the advantage which British collieries have enjoyed owing to cheap sea freightage.

The Saar coalfield is almost entirely situated in Prussia, in the south and south-west of the Rhine province, but a portion extends into the Bavarian Palatinate, and nearly all the mines belong to and are worked by the State, though with less financial success than the collieries of Westphalia.

Although its present production is far below that of the Ruhr basin, the Upper Silesian coalfield is believed to be the richest quantitatively in Europe. Nearly two-thirds of the Silesian coal-beds are situated in German territory, while one-third is in Austria and under five per cent. in Russia. An unfavourable situation as regards the great centres of industry and of population and inadequate means of

communication put the Upper Silesian colliery owners at great disadvantage in competition with their rivals in the north-west, and the principal markets for Silesian coal are in the east and south-east of Germany and the adjacent countries of Austria, Hungary, and Russia. In the north, however, Silesian coal has to meet the keen competition of English coal, which has long had an important market there. In spite of all that the coal syndicates can do, large imports from this country are still received by Hamburg, Bremen, Stettin (for Berlin), Lübeck, Danzig, and other seaports; the imports from Great Britain in 1911 amounted to no less than $9\frac{1}{2}$ million tons, equal to a third of all Germany's coal exports.

The Empire's entire output of coal (exclusive of brown coal or lignite) in 1910 was 152,828,000 metric tons, as compared with 108,539,000 tons in 1901. The production of Rhineland-Westphalia was 89,099,000 tons; that of Upper Silesia, 34,461,000 tons; that of the Saar basin, with the Bavarian Palatinate, Lorraine, and Baden, 14,413,000 tons; that of Lower Silesia, 5,533,000 tons; and that of the Kingdom of Saxony, 5,370,000 tons. The number of collieries worked was 318, of which 175 were in Rhineland and

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Westphalia, 59 in Upper Silesia, 25 in the Saar basin, 15 in Lower Silesia, and 23 in Saxony. The average number of work-people employed was in the aggregate 621,000. The value of the output was £76,000,000. No fewer than 27 collieries, employing 96,000 work-people, and with an output of 20,834,000 tons, were owned and worked by the State. As a coal-producing country Germany nevertheless takes the third place after Great Britain and the United States.

The extent to which the home consumption of coal has increased during the last quarter of a century is shown by the following comparative figures :—

	Coal Output. Metric Tons.	Imports. ¹ Metric Tons.	Exports. ¹ Metric Tons.	Home Consumption per head of Population. Metric Tons
1885	2,356,000	2,573,000	9,821,000	1·09
1900	109,290,000	8,121,000	18,488,000	1·77
1910	152,828,000	12,122,000	30,943,000	2·00
1911	160,748,000	11,769,000	35,055,000	2·10

¹ Coal, Coke, and Briquettes equated in Coal.

Of the total production of Germany's coal mines, over one-half is used directly for industrial purposes, 16 per cent. in transport undertakings of all kinds (railways, tramways, and navigation), 13 per cent. in domestic consumption, 5 per cent. in the production of gas for lighting purposes, 10 per cent. being used by the collieries

themselves in the production of coke, briquettes, etc.

The great importance of Germany's coal wealth lies in its vast extent and in the consequent fact that all conceivable home needs can be met for centuries to come. The reserves of the three principal basins have been estimated at over 200,000 million tons, which at the present rate of output would last 1300 years. At present Germany exports less than 10 per cent. of its production (deducting imports from exports). There can, therefore, be no suggestion that its coal reserves are as yet being exhausted for the benefit of foreign countries and industrial rivals, and, before any such contingency even threatened, it is safe to say that the Government and Legislature, ever concerned to protect national interests even at the sacrifice of private rights, would intervene with restrictive and possibly prohibitive measures.

The increasing cost of coal has had the

¹ It is not encouraging to remember that 25 per cent. of the coal production of Great Britain goes abroad, though on the authority of Sir William Ramsay our known coal supply will not last longer than 175 years. Nevertheless, no British statesman, nourished on the comforting maxim, 'Take no thought for the morrow,' would dream of insulting Providence by looking so far ahead as two centuries and inquiring whether it might not be prudent to endeavour to prevent waste now so as to prevent want later. Better far to trust that something will 'turn up.'

effect of stimulating the brown coal or lignite industry, and of bringing this fuel into a position of prominence which it might otherwise not have attained for a long time. Forty years ago the entire output of lignite was only 9,000,000 metric tons; even ten years ago it was little over 40,000,000 tons; to-day it exceeds 70,000,000 tons; and the home and foreign demand increases every year. One special development of the lignite trade has been the manufacture of briquettes, the production of which has increased within the last twenty-five years from 750,000 to over 15,000,000 tons.

The richest deposits of lignite are found in a district stretching around the towns of Halle, Mansfeld, Merseburg, and Meulelwitz, and overlapping Thuringia and the Kingdom of Saxony; but other beds are found on the Lower Rhine, in the Brunswick and Magdeburg district, in Hesse (near Cassel and elsewhere), in Upper and Lower Lusatia, and to a small extent in Bavaria.

Considerable though the present production of brown coal is, the importance of this branch of the mining industry is still largely prospective. Germany is the only European country besides Austria which possesses this fuel in any quantity, and as coal becomes dearer it

will inevitably play an increasingly important part in industry. The number of lignite mines worked in 1910 was 530, the number of work-people employed being 73,100, and the value of the output nearly £9,000,000.

Combining the number of work-people employed in coal and lignite mining in Germany a figure of 694,000 is reached, as compared with just 1,000,000 in the United Kingdom. Germany's output of coal and lignite together was in 1910 223,250,000 tons, comparing with 264,500,000 tons of coal produced in this country.

Germany's industrial reputation has to a large extent been built upon the solid foundations of coal and iron. Without ample coal supplies, the iron and steel industries would never have reached their present extent and efficiency. Here, again, the growth has been amazingly rapid. In the 'eighties of last century Germany produced from 3,000,000 to 4,500,000 tons of pig-iron a year, while Great Britain was producing more than twice the amount, and the United States half again as much. Great Britain retained its lead until 1900, when the United States took the first place; in 1903 Germany outpaced us, and since then we have remained a bad third. In 1911

Great Britain produced 10,250,000 tons of pig-iron, against 15,500,000 tons produced by Germany, and 23,750,000 tons produced by the United States. Forty years ago we were producing 100 tons where Germany was producing 29 tons; ten years ago the production of the two countries was equal; in 1903 Germany passed us, and to-day it is producing 150 tons to our 100.

According to the Federation of German Iron and Steel Manufacturers, the output and consumption of pig-iron has increased as follows since 1880, when the iron duties came into force:—

	Total Production. Metric Tons.	Total Home Consumption. Metric Tons.	Production per Head. Metric Tons.	Home Consumption per Head. Metric Tons.
1880	2,729,000	1,753,000	61·2	39·3
1890	4,658,000	3,921,000	97·1	81·7
1900	8,521,000	7,377,000	152·1	131·7
1910	14,793,000	8,792,000	228·3	135·4
1911	15,652,000	8,987,000	237·3	136·9

The output has of late years kept far in advance of the home consumption, and it appears likely that before long twice as much pig-iron will be produced as is required for home use. Nevertheless, Germany's iron ore is for the most part of inferior quality, and insufficient in quantity, so that every year an increasing proportion of the needed supply has to be imported. Most of the old mines which

yielded ore of high quality are nearly exhausted; this is particularly the case in Silesia, where the output declines from year to year, but it is so in a less degree in Rhineland-Westphalia.

It is estimated that of the ten or eleven million tons of ore which are smelted in the Ruhr district, only about 5 per cent. are produced on the spot. For the rest the Rhenish-Westphalian iron-masters have, to obtain their supplies from Siegerland, Nassau, and Upper Hesse, from the 'minette' mines of Lorraine and Luxemburg, and to the extent of 8,000,000 tons from France, Spain, Sweden, Russia, and elsewhere. In 1910 the total imports were equal to about one-third of the home production. The Lorraine 'minette' mines still yield the major part of Germany's requirements, though the quality of the ore is poor and the cost of transport to the North is a serious item.

It is only in recent years that the 'minette' mines have been developed on an extensive scale. This was due to the invention of the Thomas method of smelting, which overcame the difficulties created by the high phosphoric contents of this mineral. To-day the 'minette' mines of Lorraine supply 73 per cent. of all the iron ore produced in Germany. The entire production of 'minette'

ore in Lorraine in 1911 was 17,734,000 tons, of which 6·4 per cent. was used in Lorraine and Luxemburg, 15 per cent. in the Saar district, 16 per cent. in Rhineland-Westphalia, and 5 per cent. in France and Belgium. Luxemburg also produced 6,000,000 tons, of which Germany took 18 per cent. Many signs, indeed, point to Lorraine—both the German and French portions—becoming before long a very important centre of the iron and steel industries. Lorraine possesses iron ore mines of enormous extent, though the low quality of the ore has hitherto prevented them from being worked to anything like full capacity. As competition for foreign supplies increases, however, the Lorraine ore becomes more valuable.

Of late years several North German smelting companies have erected parent or branch works in Lorraine on both sides of the frontier, so as to be near the 'minette' mines, and still more of these companies have either bought existing mines or shares in them, or have obtained concessions within French territory. Thousands of Italians have emigrated to the Lorraine mining district, quiet old-fashioned villages have been transformed into 'roaring camps,' and in the course of a few years the output of ore has nearly doubled.

Other minerals found in notable quantity are copper in the Harz Mountains and the Mansfeld district of Prussia; lead in the Rhenish slate mountains, the Sudeten, and the Harz Mountains; zinc in Silesia; silver in the Harz and Ore Mountains and the Mansfeld district; nickel in districts on the Rhine and Saale, and in Saxony; and tin in the Ore Mountains. Silver mining, however, is now almost an extinct industry. The mines in the Freiberg district have seen their best days and are about to be abandoned for the present. For more than seven hundred years silver has been mined here, and according to a calculation made by the Saxon Government no less than 100,000 cwts. of silver with a value of twenty million pounds have been won, in addition to large quantities of zinc, sulphur, lead, etc. For many years nearly the whole of the mines have belonged to and been worked by the State.

Mention should also be made of the enormous wealth embedded in the salt mines. Rock salt is found in abundance in various parts of the country, and of potash Germany has a virtual monopoly, insomuch that it supplies the world with this important manurial product. The potash beds lie in the Magdeburg district, in Hanover, Brunswick,

Thuringia, and Mecklenburg, and their value is estimated at thousands of millions sterling. The thickness of the beds varies from 2900 feet in the Stassfurt district to one-sixth of this amount in Thuringia. The present production of potash salts exceeds 8,000,000 tons a year.

The industrial hub of Germany is the district which stretches from Düsseldorf in the Rhineland to Hamm in Westphalia, and hence covers a large part of these provinces. Here iron and coal rule, stern and masterful dictators both, dividing between them the upper and the nether world. Speaking of this district, the *Cologne Gazette* prophesied some time ago that before long the district between Duisburg and Hamm would form 'one enormous settlement, a single expanse of houses from forty-five to fifty miles long and from fifteen to twenty miles broad.'

The concentration of the iron and steel industry in this region is the more noteworthy inasmuch as little iron ore is found in immediate contiguity to the coal measures, and the greater part of the home ore used there has to be brought 150 miles. Disadvantage of locality is, however, counterbalanced by the fact that the Ruhr coal is specially suitable for coking and by the cheap

transit offered by the Rhine. The great ironmasters of North-western Germany have further minimised natural difficulties by combining collieries with ironworks, and to-day there is hardly a single iron-smelting company of any importance which does not use coal produced from its own collieries, while in many cases iron ore mines, collieries, blast furnaces, and even steel works and rolling mills form part of the same undertaking.¹ Some of these large companies have their own ore mines in Sweden and Spain, as well as in Lorraine and other parts of Germany.

Other important centres of the iron and steel industry are Siegerland, Lorraine, and Upper Silesia, though the ore produced in the last-named district is of an inferior kind and the coal of Silesia is also of poor coking quality. Isolated works of greater or less importance are found on the coast, as at Stettin, in the Harz district, Thuringia, and elsewhere.

The engineering and machine trades are more diffused; though strongly represented in the Rhineland and Westphalia, by towns like Düsseldorf, Essen, Bochum, Oberhausen, Hagen, Duisburg, and Mülheim, there are important works in many other Prussian towns, notably Berlin, which is surpassed by

¹ See Chapter on 'Industrial Concentration,' page 89.

no German industrial centre in the variety of its metal industries, Hanover, Breslau, Magdeburg, Hallé, and Mayence; also in Saxon towns like Leipzig, Dresden, Chemnitz, and Zwickau; in the Bavarian towns of Nuremberg and Augsburg; in Stuttgart, Cannstadt, and other towns of Würtemberg; in Mannheim and Carlsruhe, in Baden; and in Strassburg and Mülhausen, in Alsace. Many of these towns have a reputation for special machinery—thus Düsseldorf for machine tools, Chemnitz for lace-working and hosiery machinery, Leipzig for printing machinery, Magdeburg for sugar manufacturing plant, Berlin for turbines and electrical machinery, Dresden for chocolate-manufacturing plant, and Mannheim, Magdeburg, and Leipzig for agricultural machines. The great centre of the cutlery industry is Solingen, in the Berg country of the Rhineland, while the small iron industry is represented principally at Remscheid, in the same locality, and in many small towns of Thuringia, Baden, and Würtemberg, in all which centres production is still widely carried on as a home industry.

In shipbuilding, Germany is still far behind, inasmuch that the shipbuilding yards of the Clyde alone turn out a larger tonnage than all the German yards together. Nevertheless,

rapid progress is being made here also, thanks in large measure to the naval policy pursued under the present Emperor. The principal shipbuilding ports are Hamburg, Bremen with Bremerhaven, Danzig, Stettin, and Elbing, a far larger tonnage being built in the North Sea than in the Baltic ports. The industry employs some 50,000 work-people. The gross registered tonnage of merchant vessels (including river craft) building in German yards in 1910 was 573,800, and of vessels completed 221,470; but foreign yards were also building 73,099 tons for Germany.

The returns of the Trade Associations which administer the Accident Insurance Law show that one and three-quarter millions of work-people are employed in the whole of the iron, steel, machine, and metal industries.

Special emphasis has been laid upon the great mineral and metal industries, because they have to a large extent conditioned Germany's industrial progress and the expansion of its foreign trade. According to the returns of public companies of a productive and profit-making character, published by the German Imperial Statistical Office, these companies had in 1909 an aggregate capital of £786,865,000, and of this amount the capital of companies engaged in the mining, metal, and machine

industries represented over £214,500,000, while the companies in the chemical industry had a capital of £22,500,000, and those in the textile industry a capital of £31,000,000.

The cotton and woollen trades, happily for this country, have not made the same progress. Thus in the cotton industry Germany (with 10,500,000 spindles) still comes third after the United Kingdom (with over 55,000,000), and the United States (with 29,500,000). In spite of increasing rivalry all over the world, Great Britain has as many spindles as all other countries together, with the exception of the United States.

More and more Germany has become independent of other countries in industrial products. It is not necessary to go back a long period in order to prove this. In 1897 its imports of industrial products had a value of £48,293,000, and its exports of the same a value of £115,223,000, representing 18s. and £2 3s. per head of the population respectively. In 1911 the value of the industrial products imported was £72,125,000, equal to £1 2s. per head of the population, and the value of the same products exported £263,915,000, equal to £4 1s. per head. The value of the imports increased in the interval by 49 per cent., and that of the exports by

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129 per cent., while the increase of population was 23 per cent. The extent to which the exports of industrial products exceed the imports of the same products is shown for some of the principal industries by the following figures relating to 1911 :—

	Imports.	Exports.
Pig iron	£574,000	£2,620,000
Rails	4,000	2,745,000
Bar iron (angle, etc.)	574,000	2,620,000
Iron girders	1,400	2,075,000
Iron wire	289,000	3,179,000
Blooms, ingots, etc.	90,000	2,660,000
Machines of all kinds	3,550,000	27,220,000
Cycles and parts	50,000	3,996,000
Motor-cars (other than for goods)	492,000	2,120,000
Electro-technical products	375,000	7,683,000
Dyes and colours	1,025,000	11,363,000
Glass and glass ware	1,003,000	5,420,000
Paper and paper goods (other than books)	1,456,000	11,387,000

The textile trade, on the other hand, is still dependent to a large extent upon imported yarns. Germany in 1911 exported £4,405,000 worth of woollen yarn, but imported to the value of £5,690,000, nearly the whole being from Great Britain. It exported cotton yarn to the value of £2,960,000, and imported to the value of £4,945,000, almost altogether from this country.

While goods are being sold in increasing amount and value to all parts of the world,

the sea trade is more and more being carried in German ships. At the beginning of 1912 fourteen German seaports had each a fleet of merchant steamships with a registered tonnage exceeding 20,000, and four seaports had a steamship tonnage of over 100,000—viz., Hamburg, with 706 steamships and a tonnage of 2,263,000 (besides 520 sailing vessels and towing boats with a tonnage of 294,000); Bremen, with 378 steamships and a tonnage of 1,179,000 (besides 210 sailing vessels and towing boats with a tonnage of 139,000); Stettin, with 118 steamships and a tonnage of 144,000; and Flensburg with 88 steamships and a tonnage of 115,000. The entire sea-going merchant service comprised 2009 steamships with a tonnage of 4,144,000 and 61,000 seamen; 2401 sailing vessels with a tonnage of 463,000, and 13,000 seamen; and 322 towing boats with a tonnage of 104,000, and 1000 men.

The picture which has been held forth so far is one of triumphant industry. Nevertheless, although industry is advancing with steady and sure steps towards ultimate domination, its struggle with agriculture remains yet to be fought out. Germany's economic evolution has hitherto seemed to follow the course with which we are familiar

in this country, but the process there will develop differentiations of its own. With the example of England to instruct and warn them, the German agriculturists know that they are engaged in a struggle for absolute existence. Hence not only will the agrarian interests dispute every new claim of industry to direct and dominate the course of development, but the Governments, both Federal and State, will resolutely endeavour to preserve agriculture and secure for it, even under ever-altering conditions, a continued place in the full sunlight of prosperity. Even those political parties which most persistently oppose the undue pampering of the agrarian interest are agreed that it would be a national disaster if this industry were allowed to decay. They, too, bear in mind the experience of this country and intend to profit by our mistakes and lack of foresight.

The considerations which are behind this general concern for the future of agriculture are various, but two are common to all parties—the recognition that the rural districts are the only certain training ground of a healthy stock, and the determination to make the national food supply as independent of foreign sources as possible. ‘Agriculture must be protected,’ said the Prussian Minister

President on October 25, 1912; 'it is the greatest interest in the country, politically, socially, morally.' This attitude is accepted generally, though upon the question of the ways and means of affording agriculture protection opinions differ greatly.

Germany is still to a large extent an agricultural country, although no longer able to feed its population, and although industry and trade provide employment for an ever-growing proportion of the people. Roughly one-half of the entire surface of the land is still arable, or about the same proportion as in France, as compared with a third in Austria, where forests are more abundant, less than a third in Great Britain, and one-fifth in Russia, where, again, 40 per cent. of the surface is forest. The chief granaries of the country are Prussia and Bavaria, which together supply four-fifths of all the grain produced in the Empire. The effect of climate and poor soil is seen in the case of Prussia in the fact that it produces nearly four times as much rye as wheat, while Bavaria produces rye in only half this proportion. Much of the corn produced in Prussia is used for the making of spirit, and the same is true of potatoes. Beet is also grown in large quantities in Prussia for the manufacture of sugar.

Tobacco is grown on a considerable scale, not on large farms but by small cultivators, in Baden, Alsace, parts of Bavaria, Pomerania, and elsewhere. The vine is cultivated with great success on the Rhine and Moselle, some of the valleys adjoining which are veritable sun-traps; and in Alsace-Lorraine, Baden, Würtemberg, and to a less extent in Bavaria. Fruit is largely grown in the Central States, which in regard both to agriculture and industry may be regarded as the home of the small *entrepreneur*.

The utmost variety of land tenure is met with. Large estates are most numerous in the Prussian provinces of Pomerania, Posen, Brandenburg, and Silesia, and in the two grand duchies of Mecklenburg, and least numerous in Oldenburg, Würtemberg, Bavaria, and the Prussian provinces of the Rhineland and Westphalia. Three-quarters of the great estates of Germany are found in the eastern provinces of Prussia and the two Mecklenburgs, where in some parts as much as four-fifths of the whole surface are in the hands of large proprietors. In general, the North is the home of the old manorial estates, which have given to Prussia so many of its best-known statesmen and soldiers. The extremes of material condition are very

glaring in these districts. While west of the Elbe, in Westphalia, peasant proprietorship is represented in every form and extent, east of that river there are on the whole only two large classes, those of the wealthy landed proprietors and the poor dependent farm labourers. Nevertheless, Germany as a whole is a land of small proprietors and holders. About one-half of all the agricultural land in the country is divided up into relatively small holdings, while one-quarter is held by large proprietors. The genuine peasantry has its home in Bavaria, in certain parts of Würtemberg and Baden, in Hesse, Thuringia, and in parts of the Rhine province and Westphalia.

Germany is also very rich in forests, a fact which partly explains why it imports timber and wood to little more than half the value of the corresponding British imports. Tacitus, in his minute study of the country (*Germania*), speaks of the forests as then covering the greater part of the country. Even now no less than one-quarter of the entire surface is so covered. The aggregate area of these forests exceeds 53,000 square miles, and about four-fifths are systematically cultivated. In the hilly districts, of the midlands and the south, which are unsuited to agriculture, from one-third to two-thirds of the whole surface is under trees.

Taking States as a whole, nearly one-third of the whole of Bavaria and Würtemberg, more than a third of Baden, and in several of the small States over two-fifths of the total surface are forest; even in Prussia nearly one square mile in four is so cultivated. The districts which are poorest in forests are those bordering on the North and Baltic Seas, some of the lake regions of Prussia, and the marsh and moor lands. The greater part of the trees grown are coniferous (about two-thirds of the whole), but there are also large forests of beech, oak, and birch, especially in the north.

It is characteristic of the German forests that barely one-half are in private ownership; one-third belong to the different States, and one-sixth belong to the local communities. There are many small towns and villages, the inhabitants of which exercise the right of common use in their forests, including the provision of fuel, and some in which all the necessary public expenditure is met by the sale of timber from the adjacent common woodlands.

The extensive use which is made of the large forests, both as a means of subsistence and as a source of health and enjoyment, gives to them an important place in German

national life. What the sea is to the coast inhabitants of a country like our own, so is the forest to countries like Germany, Austria, and Russia—the nurturer of a hardy and virile race, the preserver of strength and freshness in life and character, the parent of the homely, honest virtues. Nowhere in Germany are the immemorial manners, customs, legends, dress, and speech of rural life so well preserved as in the forest districts, where isolation from the rest of the world makes the inhabitants indifferent to the events and influences which count for so much in the lives of modern townsmen. The open country, owing to the facile means of locomotion which it enjoys, is a ruthless leveller of life and character; but in the inaccessible forest lands people retain an individuality of their own and preserve with tenacity their traditional habits and ways of thought.

CHAPTER III

STATE RAILWAYS

ONE of the most important factors in the development of industry, the opening up of the home markets, and even to some extent the promotion of foreign trade, has been

the wise use made of the railways. The question of railway nationalisation is not a practical question in Germany, and indeed it cannot be said to exist at all; for the railways are nationalised—have been nationalised for a generation—and the German Governments and peoples would as soon think of undoing that wise act of policy as of handing back into private hands the post or the telegraph.

Nevertheless, the first German railways were almost all private undertakings, for when the railway era opened the State stood aside, influenced largely by English example, but deterred also by the disbelief of the old-fashioned bureaucracy then supreme in the necessity or even practical value of the new means of transport. When it was proposed to build a railway from Berlin to Potsdam the Prussian Postmaster-General of that day ridiculed the project as mere waste of good money. 'A stupid business!' said he. 'Here I am sending several diligences to Potsdam every day and nobody uses them, yet they are going to build a railway in addition!' To-day more than 300 trains run between Berlin and Potsdam every twenty-four hours, and the railway is hardly second in importance to the post as

a department of State enterprise. Nearly a generation has passed since all the great traffic lines were acquired by the State, and since that time every new line of importance has been built by the State and worked for the State's advantage.

When the constitution of the Empire was adopted in 1871, it was contemplated that the railways, though in the ownership of different States, would be administered on a uniform basis as part of a co-ordinated system, and that every State would subserve its own convenience to that of the new Imperial Federation. That instrument specially reserves to the Empire the right to exercise supervision over all railways and to legislate regarding them in the twofold interest of national defence and general traffic facilities. The federal Governments are required to administer the railways of the country as a uniform system in the interest of the general convenience, and in furtherance of this idea to construct new lines where necessary. Provision is also made for the maintenance of through traffic and to this end for the interchange of rolling stock. So far does the competence reserved to the Empire go that, in the event of the interests of national defence or of traffic

requiring it, the Imperial Legislature is empowered to construct or to authorise the construction of new railways in any federal State, even against its will, and it may even exercise the right of expropriation. Every existing railway is also required, in the interest of through traffic, to allow new lines to join on to it, of course at their own expense, and no new right to object to the construction of parallel or competing lines is recognised. The regulation of railway rates is also secured to the Empire, which is empowered to insist upon such a measure of uniformity as it may consider expedient.

While thus very wide constitutional powers are possessed by the Federal Parliament and Government, these powers have to a large extent proved ineffectual and unreal. They represented an ideal plan of procedure rather than a practical programme, and, in fact, have been but little exercised. From the first the federal States, with the exception of Prussia, strongly resented any central interference with their railways and the administration of them, and though, during the early years of the new Empire, Prince Bismarck and his advisers repeatedly attempted to give effect to the constitutional provisions, it was in vain. Bavaria in particular, in virtue

of special guarantees and exemptions which were not accorded to the other members of the Confederation, offered strong resistance, and the rest of the States were only too ready to follow its lead. An Imperial Railway Office was, indeed, established by law as early as 1873, but from that day to this its executive powers have been insignificant.

Had Prussia had its way the whole of the main railways of Germany would have passed into Imperial ownership and management over a generation ago. In 1876 Prince Bismarck tried to force the hands of the other States by introducing in the Prussian Legislature a proposal for the transfer to the Empire of all Prussian State railways, with all rights and powers in relation thereto. Both chambers passed the Bill by a large majority, but it remained a dead letter, for with one consent the other States refused to respond to Prussia's lead. Dislike of the idea of an imperial railway system was a sufficient explanation of the attitude thus taken, but suspicion of Prussian motives also influenced some of the other States. Nor can it be doubted that Prussia would have benefited immensely by the adoption of a scheme of imperial railways, owing to the fact that its network of lines was at that

time very incomplete and its communications with the south very inadequate. Seeing, therefore, that the other States were indisposed to move, Bismarck refrained from approaching the Federal Council with the offer of Prussia's lines, and he never again moved in the matter.

Nevertheless, the rebuff was not an un-mixed evil for Prussia, for it led to the immediate reorganisation and extension of the railway system of that kingdom, with the result that in a few years the Prussian State railways became the best and the best-managed in Germany; a position of primacy which they have maintained ever since. From 1879 forward, railway after railway was acquired from private companies, until to-day the entire system of main lines is nationalised.

The length of railway under State management in Prussia in 1879 was only 3780 miles; in 1884 it had increased to 12,180 miles, and in 1910 it was 21,250 miles. The capital invested in these lines increased in the same period of thirty years from £74,000,000 to £541,830,000, though a large proportion has been repaid. The efficiency of the Prussian State railway system was also greatly increased by its union in 1896 with the Hessian railways, which are carried on for the joint

benefit of the two States. Together the two systems cover virtually the whole of North Germany, with the exception of Oldenburg and Mecklenburg. As late as 1879 more than half of the railway system of Prussia was still in private hands; to-day barely 0·6 per cent. of the main and secondary normal gauge lines is in private management.

In the other States the nationalisation principle has similarly triumphed, where indeed private enterprise was not kept out from the beginning, as in Oldenburg, and to-day there are only 160 miles of main line and 2120 miles of secondary line in private management in the whole of Germany. The progress of the nationalisation movement and the growth of the railway system in general will be seen from the following figures :—

	Length of Full Gauge Lines. Miles.	Length Owned by the State. Miles.
1875 . . .	17,488	—
1880 . . .	21,023	13,888
1890 . . .	26,136	18,738
1900 . . .	31,049	28,570
1910 . . .	36,894	34,596

During the thirty years, 1880 to 1910, the capital invested in these full gauge lines, State and private combined, increased from £444,000,000 to £867,500,000, while the

number of railway servants, exclusive of officials, increased from 155,000 to 416,000. The present number of railway employees of all grades is 697,000. In 1880 the number of passengers carried was 215,000,000, but in 1910 1,541,300,000; while the goods traffic increased from 165,200,000 to 575,300,000 tons. The third and fourth class passengers are the mainstay of the railway revenue, and this has been more than ever the case since the introduction of an imperial tax on railway tickets. In 1909 the Prussian passenger traffic and receipts (the conveyance of military excluded) weredivided as follows:—

	Passengers carried. Per Cent.	Passenger receipts. Per Cent.
1st Class	0·2	3
2nd Class	9·7	19
3rd Class	44·4	42
4th Class	45·7	36

In 1910 Germany had about 18 miles of railway per 100 square miles of surface, a ratio exceeded in Europe only by Belgium, Holland, the United Kingdom, and Switzerland, in the order named; while Germany's ratio to population—viz., $5\frac{1}{2}$ miles to every 10,000 inhabitants—was exceeded by Sweden, Holland, Denmark, Switzerland, and Norway, France and Belgium, in the order named.

In addition to the normal gauge railways, there is a length of 1362 miles of narrow gauge railway, of which 646 miles are in State and 716 miles in private ownership. The interests of local traffic are served by a system of light railways distinct from the ordinary urban tramway system. The latter had a total length in 1910 of 2742 miles, while the light railways, which run between adjacent places and facilitate communication in rural districts, had a length of 6303 miles; Prussia alone had 6168 miles of light railway, one-third of the whole being in the three agricultural provinces of East and West Prussia and Pomerania.

While thus the question of national ownership of the railways is settled in Germany, there are many matters of administration which still furnish occasion for serious and justifiable controversy, notably with regard to the question of the relations between the railways of the several States, including co-operation in their efficient and harmonious working and the unification of rates. Before the railways were nationalised there were over 600 different sets of rates, without counting preferential rates applying to special cases. After long negotiations the several State administrations have agreed upon the

rate question, and since 1910 rates for passengers have been uniform throughout Germany, and those for goods virtually so.

The Central Railway Office organises and controls the rolling stock and equipment of the railways, and serves as the centre from which administrative and technical improvements are initiated, weighed, and, when desirable, pressed on the railway administrations of the various States. There is also a continuous exchange of rolling stock between the various administrations, but the smaller States will not agree to hold even this part of the railway system in common.

Associated with the Central Railway Office are a series of district advisory councils or committees composed of representatives of all the great economic interests chiefly concerned in the transport system—industry, agriculture, commerce, shipping, etc.

For the rest each State manages its own lines, and as far as possible regulates its policy according to what it conceives to be the best interests of its own population and territory.

The extent to which the State railways are or should be profit-making enterprises is a point of keen dispute. The amount of revenue directly derived from the railways by the Exchequers of the several States can be

ascertained with greater or less exactitude, but there is great obscurity as to how the figures are arrived at. In Prussia, in particular, new lines have for a long time been built partially out of revenue, and renewals of rolling stock are always paid for in the same way, with the result that the railway system is greatly under-capitalised and the existing debt upon it is far from representing its intrinsic value. The profits of the Prussian State railways in 1911, before allowing interest on the outstanding railway loans of £344,000,000, amounted to about £25,000,000, and after deducting $3\frac{1}{2}$ per cent. interest upon loans a net profit of between twelve and thirteen millions remained. Financial considerations did not play a direct part in the nationalisation of the Prussian railways; and, indeed, the general opinion appears to have been entertained that the State was accepting liabilities quite out of proportion to any possible material advantages. Nevertheless, it may safely be claimed that the transaction has proved, in the words of Professor H. Schumacher, 'a brilliant stroke of business,' if not 'the most brilliant ever transacted by a modern State.'

Partly owing to their comparatively small extent, but also to the less populous character

of the country served (except in Saxony) and to unequal administration, the State railway systems of the other important States—Bavaria, Saxony, Würtemberg, and Baden—have never shown the same results. The railways of Bavaria, in 1911, returned $4\frac{1}{2}$ per cent. on the outstanding loans; those of Saxony, 5·4 per cent.; those of Würtemberg, 3·4 per cent.; and those of Baden, 3·8 per cent.

The net yield of all the German State railways, in 1911, was estimated at £36,500,000, and after allowing a deduction for interest at the rate of $3\frac{1}{2}$ per cent. a profit of £16,000,000 remained for public purposes. It has been estimated that since they passed into the national possession the German railways have provided over £150,000,000 of revenue, and inferentially saved the various States taxation to that extent.

Unquestionably the profits are swelled by the comparatively low wages paid to the inferior grades of labour, and perhaps to some extent by the fact that the railway service employs so many females, and it may be unsafe to conclude that the present return will long continue. The daily wages of labourers on the Prussian State railways, in 1909, ranged from 2s. 6d. to 3s. 3d. a day,

and those of artisans from 3s. 3d. to 4s. 9d., the hours varying from nine to twelve a day. These rates, low as they are, were 17 per cent. higher than in 1905. It is easy to see that even a moderate increase of pay in the case of a staff now numbering 488,000 servants of all grades would make a serious inroad upon profits. To some extent the State tries to atone for paying low wages by providing benefits of material value to certain classes of workmen—*e.g.*, houses at low rents, free garden plots, pensions, bonuses, holidays, etc.; but the wages question is a source of great soreness, and of as much agitation as is possible under the rigid regulations applying to this branch of the State service which make strikes impossible.

In these days of swollen national expenditure and exhausted sources of revenue the temptation to work the railways for the sake of profit is great and natural, yet on the whole the Governments keep well to the front the interests of traffic and commerce. The Prussian Minister of Public Works stated in the Lower House, on April 16, 1912, 'I intend to be always in the first place a Minister of Communications, though at the same time I must, as a Minister, take account of the financial well-being of the State. Like

Bismarck, I regard the railways as primarily a transport institution and not as a milch cow, and I shall never administer my department in a purely fiscal spirit.'

There is little complaint of the rates charged either for passengers or for merchandise, though the introduction of an imperial tax on railway tickets has led to a large decrease of second-class in favour of third-class travellers. When the rates were last revised, return fares and free luggage were abolished; but, on the other hand, there was an all-round reduction in single fares. The following were the rates per kilometre (five-eighths of a mile) for ordinary trains adopted in 1907, and those which prevailed in Prussia during the preceding eight years:—

	1907. Without Free Luggage.	1899 to 1907. With 52 lb. of Luggage Free.
1st Class ..	7 pfennige = 8·4d.	8 pfennige = 9·6d.
2nd Class ..	4½ „ = 5·4d.	6 „ = 7·2d.
3rd Class ..	3 „ = 3·6d.	4 „ = 4·8d.
4th Class ..	2 „ = 2·4d.	2 „ = 2·4d.

There is an addition for express trains as follows:—

1 to 75 kilometres	—1st and 2nd Class	6d.
	—3rd Class	3d.
76 to 150 „	—1st and 2nd Class	1s.
	—3rd Class	6d.
Over 150 „	—1st and 2nd Class	2s.
	—3rd Class	1s.

The charge for passengers' luggage is 2·4d.

for 1 to 25 kilos. up to 50 kilometres, 6d. from 50 to 300 kilometres, and 1s. for 300 kilometres and over, with a higher rate for weights beyond 25 kilos.

The State direction of the railways makes it possible to apply differential rates where the conditions of special localities or industries make preference desirable, to assist the export trade by low charges to the seaboard, and to meet times of temporary dearth, whether of food or fuel, by concessions of the same kind, and all these measures are adopted from time to time. Thus, the industry of the Siegerland district is stimulated by a reduction in the rates for the conveyance of ore thence to the Ruhr and Aix-la-Chapelle districts, and in the rates for the conveyance of fuel needed by the Siegerland iron industry. In the same way the disadvantage of the inland position of Lorraine is minimised by special railway rates.

The seaports in general have the advantage of special rates, which are not, however, intended to benefit German as against foreign shipping, but to afford to inland industrial towns some compensation for the disadvantage of remoteness from the sea.

The State railways are also useful in another way, for they purchase the whole of their

building material and rolling stock from private firms, and none of the work goes abroad, and little even from one federal State to another. It is also an excellent feature of the system of contracting that, as far as possible, work is given out in such a way and at such times as may tend to equalise employment. It has been computed that the German State railways afford as much employment to the iron, steel, and engineering trades as shipbuilding does to English industry.

Important though the results of nationalising the railways have been for the convenience of traffic and the promotion of trade, no one would pretend that the advantages of the State railway system are yet realised to the full, nor can this be the case so long as the States hesitate to agree upon a larger measure of uniformity in administration.

Here, as in so many other directions, the spirit of particularism is still very strong. While the more progressive traffic reformers contend that all the railways should be placed under a single administration and worked as one system, profits being distributed in proportion to the traffic carried, the Governments of the larger States—Prussia being the sole exception—insist upon keeping the control of their railways in their

own hands, using them as far as possible in the economic interests of their own territories and populations. Now, as formerly, Bavaria is most resolute in opposing the idea of imperial ownership. The attitude of the Bavarian Government was publicly stated only a few months ago in the following words: 'There exists no necessity for the consolidation of the railways in an imperial system. A general simplification of arrangements in the interest of traffic has already been carried out, so that there can be no question of the transfer of the railways to the Empire, and none of the Governments wish it. The maintenance of the purely Bavarian railway enterprise is of the utmost importance both from a political and economic standpoint, for only in virtue of such independence is it possible for due regard to be paid to the peculiar conditions of Bavaria.' Strong though the sentiment of State independence is, there is little doubt that circumstances will before long compel further concessions in the direction of unification of administration, though without any sacrifice of the principle of independent State ownership.

At the present time the question of railway electrification is in the air, and in Prussia, Saxony, and Bavaria large projects are in

contemplation. A practical beginning has been made in Prussia, for the line from Bitterfeld to Dessau, on the Magdeburg to Halle railway, has already been electrified. Power is produced at a special station built near the lignite mines of that district, and the Government has protected itself by securing a supply of lignite at 2s. a ton for thirty years. So successful has the experiment been that the Government has reported to the House of Deputies that 'the State Railway Administration will in consequence pay the greatest attention to electric traction for trains, the more so since steam locomotives have reached a degree of perfection which would almost seem to exclude any further improvement.' Following up this policy the Government is now about to electrify some 160 miles of railway in the Silesian hill district, where fuel can be obtained easily and cheaply.

A still more important project is the impending electrification of the Berlin Metropolitan and Suburban Railway system, a work decided upon several years ago, but delayed owing to the necessity of combining with it a large extension of these lines in order to cope with the congestion of traffic. The history of the Berlin Metropolitan

Railway affords a striking illustration of the vigilance and foresight of the Prussian Government in the matter of public utility enterprise. The idea of a line of rail intersecting the metropolis was first taken up by a private company in 1872; but before the project had been elaborated the Prussian Government insisted on being taken into the scheme. A company was duly formed, with a share capital of some two and a half million pounds, of which the State stipulated that it should provide nearly one-half; as the other parties to the scheme were unable to raise their shares, however, the State took over the whole undertaking, constructed the line, and worked it from the first as a national enterprise, linking it with a large system of suburban communications. As a financial undertaking, the line has proved an unqualified success, while the service provided and the fares charged give complete satisfaction. When the line was opened, it was estimated that 5,000,000 passengers would be carried yearly; the number in the first year was 50 per cent. more than the estimate, and in 1911 it was 231,000,000.

The electrification project is estimated to cost over £6,000,000, and the two large power stations which are to be erected will cost

an additional £4,500,000. The Government is taking no risks, however, for it announces already that there will be an increase in the present low fares, so as to obtain additional revenue to the amount of some £400,000. Nearly two-thirds of the expenditure on electrification will be required for rolling stock. It is expected that the execution of the work will occupy four and a half years after the scheme has received Parliamentary sanction.

The State Railway Departments of Bavaria and Saxony likewise propose to electrify some of the lines in those countries. With this end in view, the Bavarian Government is already building large power stations, to be worked by water power, while the Government of Saxony has bought lignite mines at a cost of £3,000,000, with the object of having at command an abundance of cheap fuel.

CHAPTER IV

DEVELOPMENT OF THE WATERWAYS

If the railway system has contributed greatly to Germany's economic efficiency and the building up of its industry and commerce, the modern development of its natural and artificial waterways has helped

in at least an equal degree. Here, again, the State has not only led the way but has done most of the work.

The development of the waterways went hand in hand with the nationalisation and extension of the railway system. So long as the railways were in private hands the waterways were neglected. The nationalisation of the railways, however, was at once a result and a sign of the State's recognition of the immense importance for national development of efficient transport facilities. Hence the era of State railways was simultaneously an era of canal construction on a large scale, the one means of transport being regarded as complementary to the other. For nowhere out of England is the idea prevalent that the days of the canal as a means of transport for heavy goods, for which quick transit is unessential, are over. Even to-day, after so much has been done, Germany is increasing the number of its canals and improving its old waterways, both canal and river, at enormous cost.

The length of Germany's navigable waterways at the date of the last official estimate was over 8600 miles, and of this length no fewer than 2200 miles consisted of canals or

canalised streams. No estimate of the capital represented by canal construction in Germany is available, but including the projects now in hand, Prussia alone has expended £50,000,000 on canals during the last twenty-five years.

First as to river transport. Important though the German river system is for commercial purposes its importance is largely due to the courageous enterprise which has supplemented and improved natural possibilities. Germany has six rivers of the first rank, and all save one flow north. The Rhine, Elbe, and the Weser, with their tributaries, flowing into the North Sea, are navigable for about 1050, 700, and 510 miles respectively. The Baltic Sea receives the Oder, navigable with its tributaries for 230 miles, and the Vistula, navigable with its tributaries for nearly 1000 miles. The Danube and its tributaries have a navigable length of 430 miles, though in Germany only vessels of medium size can use even the main stream. There are many rivers of secondary importance for navigation, yet forming indispensable links in the national system of waterways, and principally the Ems, Pregel, Memel, Havel, Spree, Saale, Main, and Neckar, and a like value attaches to some of the lakes and 'haffs' of North Germany.

Not only are the rivers important for internal trade, however, but in conjunction with the canal system they facilitate communication with all the adjacent countries—the Rhine with Belgium, Holland, and France in the north, and with France and Switzerland in the south; the Elbe with Bohemia, the Vistula with Russia, and the Danube with Austria.

The navigable rivers, lakes, and canals together have a length of 8620 miles, of which over 8500 miles have a depth of over $6\frac{1}{2}$ feet at mean level, 1380 miles one of over $9\frac{3}{4}$ feet, and 880 miles one of over 13 feet. The latest German official return of the navigable waterways gives the lengths shown on the opposite page.

Vast sums have been expended, and are being expended every year, by the States and the local government authorities in improving the navigable rivers and streams; but more instructive as an example of national foresight and enterprise has been the development of the canal system under State direction during the past thirty years. Although Germany has applied literally James Brindley's famous dictum that rivers exist in order to feed canals, the main object kept in view in canal construction has been to increase the efficiency of the natural waterways by bringing them into communication.

Thus, the Rhine is connected with the Weser in the east, with the Danube in the south, and with the Meuse in the west; canals connect the

Length of Navigable Waterways—in Miles.

	Natural Streams.	Chan-nelled Streams.	Navi-gable Canals.	Lakes and Haffs.
Rhine	1,053	278	237	68
Elbe	694	219	90	89
Weser	518	66	1	28
Danube	429	21	—	35
Oder	994	98	50	221
Vistula	257	20	41	66
Ems	291	53	268	31
Memel	156	—	19	63
Pregel	136	—	—	—
Masurian Waterways	8	—	9	108
Frisches Haff	—	—	—	65
Mark of Brandenburg	323	84	264	195
Baltic Sea Waters west of the Oder . .	20	—	—	188
Coast Waters north of the Elbe (including North and Baltic Sea Canal) .	134	41	66	170
Coast Waters between the Ems and Weser	21	—	9	79
Danube and Main Canal	—	—	89	—
Haute-Ems Canal . . .	—	—	—	—
Other Canals	—	—	109	—

three rivers Elbe, Oder, and Vistula; and the canal which is now being built from the Rhine by way of the Weser to Hanover will in all probability be carried to the Elbe sooner or later, as was the Government's original intention.

The greatest progress in the development of the canal system has taken place during the thirty years from 1880 forward, and it has been due quite as much to technical improvements in the science of canal engineering as to the growing needs of commerce. Not only are canals built more quickly and at less cost than a generation ago, but they are built for larger craft and heavier traffic, and the improved methods of construction enable the modern engineer to overcome physical difficulties which, not long ago, were insuperable. Rivers are crossed, ascents and descents of hundreds of feet are made with facility, and ships lifted and lowered bodily in troughs instead of by the old and slow method of locks.

Moreover, just as the sailing vessel has been superseded by the steamship, so the old canal boat punted by long oars is more and more giving way to power-propelled craft, not merely because time counts more than formerly, but because the waterways are deeper. In size, too, the modern river and canal boat is quite a different craft from that of a generation ago. Canals capable of taking vessels of 150 tons register used to be regarded as sufficient for all needs, whereas to-day a minimum register of 600 tons is

taken for granted in all new schemes, while more and more the 'ship canal' capable of taking still heavier vessels is superseding the old shallow waterway. The largest waterway project of recent times was the construction of the Kaiser Wilhelm Canal, connecting the North and Baltic Seas, a project originated primarily in the interest of national defence, yet serving the interests of commerce in a high degree.

A glance at any map of the waterways of Germany will show how well thought out the canal system has been. Let the Rhine, the Elbe, the Weser, or the Oder be taken, and it will be seen that each river has a network of navigable tributaries and canals which give to towns and country districts hundreds of miles distant from the sea the advantage of cheap water transport. Thus goods can be sent from the mouth of the Rhine direct into Switzerland and the south of France in one direction, and to Würtemberg, Bavaria, and Austria in another. Merchandise bought in Hamburg can be despatched by river and canal every yard of the way from that port to Berlin, or even to Silesia in the extreme south of Prussia. Thanks to its situation on a small stream, and the canal which links it up with a main water artery, Berlin,

though a hundred miles distant from the seaboard, is a larger port than any inland port in Germany, with the exception of three on the Rhine. It has access to the Baltic at Stettin by means of a canal connecting the Spree and Havel with the Oder, while to the south, by means of the Spree and Oder and a connecting canal, it communicates with Breslau and the Silesian colliery district beyond.

Berlin still obtains a large part of its coal supply from Great Britain, and but for the cheap transport afforded by these waterways not only Berlin but the entire north-east of Prussia would look to this country for fuel. In 1910 46 per cent. of Berlin's total coal, coke, and briquette supplies came from Upper Silesia, 35 per cent. from Great Britain, and only 12 per cent. from Westphalia. Again, by means of the Havel, Berlin has the advantage of direct communication with the Elbe and Hamburg, and before long it will be in touch both with the Rhine in the far west and the Danube in the south.

Between Berlin and all the important towns accessible by river and canal regular sailings are arranged, *e.g.* between Berlin and Hamburg, Stettin, and Breslau several sailings a day, including at least one express boat, and between Berlin and Magdeburg, Halle,

Bromberg, and a number of other large towns several times a week. Berlin's water traffic is carried by three kinds of craft. Small vessels of 200 tons, known as 'Zillen,' many propelled by electric motors, bring timber and bricks from various parts of Brandenburg and Mecklenburg; the coal from Silesia is carried in 'Oder' ships of 400 tons; while corn is brought in large quantities from Hamburg and the Elbe in larger vessels of 600 tons and upwards.

The importance to Berlin of its waterways under present conditions will be understood from the fact that the in and out traffic in 1910 amounted to 5,750,000 tons, to which should be added the traffic of the suburban towns, exceeding 3,000,000 tons. In 1911 Berlin obtained 525,300 tons of corn and flour by water and 337,600 tons by rail; also 1,703,000 tons of coal, coke, and lignite by water, and 8,229,000 tons by rail.

The enormous expense saved to Berlin by the existence of its cheap water transport may be shown by a comparison of the freight rates by water and rail for corn and coal, of which together it received some 2,250,000 tons by water in 1911. It should be explained that the rates for water carriage are mean rates based upon monthly averages, since there is considerable fluctuation in the

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cost of water freightage owing to charges being largely determined by the state of the water.

FREIGHT RATE FOR CORN PER TON TO BERLIN IN 1910.

From	By Water.	By Rail.
Stettin . . .	3s.	7s. 3½d
Breslau . . .	3s. 11½d. to 5s. 6½d.	14s. 6d.
Hamburg . . .	2s. 6d.	13s. 9½d.

FREIGHT RATE FOR COAL PER TON TO BERLIN IN 1910.

From	By Water.	By Rail.
Stettin . . .	1s. 11d. to 2s. 5½d.	4s. 2½d.
Breslau . . .	2s. 6½d. to 2s. 11½d.	8s. 3½d.
Hamburg . . .	2s. 1d.	7s. 4½d.

The importance of the national waterways will be seen from the following statement of the freightage carried by them in 1910; the corresponding freightage carried by the railways is shown for comparison :—

GOODS CARRIED IN 1911—IN TONS.

	Total.	Of which	
		Home Trade.	Foreign Trade
Waterways	76,632,000	42,304,000	34,328,000
Railways	400,879,000	346,420,000	53,870,000
			Transit 539,000

The bulk goods of which the largest totals were carried by water in 1910 were as follows (the corresponding figures are given for the railways) :—

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	Waterways. Tons.	Railways. Tons.
Coal, briquettes, and coke	21,396,000	125,507,000
Earths, gravel, sand, loam	9,938,000	21,127,000
Iron ore	7,944,000	15,138,000
Bricks and tiles	4,537,000	42,406,000
Corn	5,514,000	12,294,000
Timber	5,146,000	19,487,000
Pig iron, iron and steel goods	2,841,000	80,280,000
Building stone	1,621,000	897,000
Lignite and briquettes	1,238,000	32,469,000
Cement	1,217,000	5,875,000

In 1907 (the latest year for which data exist) 26,235 vessels of all kinds were engaged in transport on inland waters, 3312 of these being propelled by steam or electricity. The total carrying power of this river and canal fleet was nearly 6,000,000 tons, 7000 of the vessels having a capacity of 250 tons and over, and 2000 a capacity of 600 tons and over.

The goods traffic by water alone of some of the principal river ports in 1910 was as shown on page 75.

Merely to state these figures is to prove the immense importance of the waterway system in the development of German inland towns. Many striking illustrations might be named, but probably none is more instructive than the Rhine port of Mannheim, situated favourably at the junction of that river with the Neckar, 160 miles south of

Cologne and half that distance north of Strassburg, and at present the point of transshipment for the heavy traffic which comes by water for South Germany and countries beyond. So much of old Mannheim as still survives goes back only to the end of the seventeenth century, for with the exception of a small nucleus the town is quite modern. At the beginning of last century it had barely 20,000 inhabitants, and the sister town of Ludwigshafen, on the left bank of the river, was a mere village. For nearly two generations its progress was slow and unpromising, until an energetic administration came to the head of local affairs, and saw the wisdom of sinking capital freely in the construction of harbours and docks and the purchase of a large estate for division into sites for industrial undertakings, and resale to the public without profit. Natural advantages, combined with enterprise and intelligent anticipation of future needs, have given to Mannheim a reputation great and distinctive even in a country noted for the largeness of its public enterprise. To-day Mannheim is one of the most prosperous as well as most handsome towns in Germany, with a population of 194,000 (or including recently incorporated suburbs, 216,000), to which

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Ludwigshafen across the river adds a further 83,000.

In 1870 the entire traffic of the port both

	Tonnage.	
	In.	Out.
RHINE—		
Duisburg-Ruhrort	7,019,000	13,664,000
Mannheim	4,207,000	642,000
Strassburg	1,124,000	77,000
Düsseldorf	1,216,000	199,000
Rheinhausen	1,238,000	186,000
Alsum with Schwelgern	1,930,000	1,159,000
Frankfort (Main)	1,490,000	851,000
Ludwigshafen	1,678,000	822,000
Rheinau (Mannheim)	1,550,000	108,000
ELBE—		
Hamburg	5,109,000	7,507,000
Dresden	733,000	126,000
Riesa	483,000	85,000
WESER—		
Bremen	370,000	249,000
ODER—		
Kosel	645,000	2,137,000
Breslau	438,000	691,000
SPREE AND CANALS—		
Berlin	5,197,000	651,000
Charlottenburg	2,528,000	31,000
EMS-JADE—		
Emden	1,038,000	1,182,000
Dortmund	870,000	259,000
PEGEL—		
Königsberg	1,051,000	123,000
Memel (Kurisches Haff)	429,000	135,000

by land and water only amounted to 750,000 tons; in 1911 its water traffic alone exceeded 8,500,000 tons, and that of the two towns together over 9,000,000 tons, while Mannheim's railway traffic amounted to nearly 7,000,000

tons, and that of the two towns together to 9,250,000 tons. Not only is Mannheim the great distributing centre for corn, coal, petroleum, timber, tobacco, and other merchandise for a large part of Central and Southern Germany, but it receives by water and consigns by rail a vast quantity of merchandise destined for Switzerland, Italy, France, and Austria. Its docks will take the largest vessels that trade on the Rhine, its warehouses are designed on mammoth lines, and its devices for the quick and economical handling of coal are as perfect technically as they can be made. The port has five distinct docks—the Neckar dock, 4000 yards long, and lying near the junction of that river with the Rhine; the grain dock, opening direct into the Rhine; the petroleum dock, 2300 yards long by 130 yards wide, and covering an area of 660 acres; the inner dock, with two basins and 3000 yards of wharfage, having direct passage into the river; and the industrial dock, formed out of a disused arm of the Rhine, covering an area of over 800 acres, and having a frontage of some 7500 yards. Finally, there are several miles of quay on the open Rhine.

No better proof could be advanced of the success of Germany's policy of developing its

waterways to the utmost than the fact that at the present time the Prussian Government is committed to two new and costly schemes, one for the increase and improvement of the canal system, and the other for the improvement of river transport.

The canal construction programme, as authorised by a law of 1905, and now in course of execution, comprises two separate yet complementary projects, relating to the Rhine-Weser and Oder areas respectively.

(1) The Rhine-Weser scheme includes the construction of a ship canal from Ruhrort to the Dortmund-Ems Canal at Herne, including a branch canal from Datteln to Hamm, the estimated cost of these combined works being £3,725,000; a ship canal from the Dortmund-Ems Canal at Bevergern to the Weser (in the neighbourhood of Bückeberg), with branch canals to Osnabrück and Minden, and improvements to the Weser below Hameln, at a total cost of £4,050,000; the construction of a canal from the Weser at Bückeberg to Hanover, with a branch to Linden, costing £1,975,000; important enlargements to the Dortmund-Ems Canal, costing £307,500; the canalisation of the river Lippe from the Weser to Datteln and from Hamm to Lippstadt, at a cost of £2,230,000;

and, finally, a large amount of land reclamation and improvement in the neighbourhood of the foregoing works, costing £250,000. The whole of the Rhine-Weser project, with its ramifications, is estimated to cost £12,537,500.

(2) The Oder scheme comprises chiefly the construction of a ship canal from Berlin to Stettin, costing £2,150,000; improvements to the waterways between the Oder and the Vistula, and to the Warthe from the mouth of the Netze to Posen, costing £1,058,500; the canalisation of the Oder from the Neisse at Glatz to Breslau, costing £987,500, and other works.

The cost of the two schemes together, in their original form, was estimated at £16,750,000, but this amount will be largely exceeded before the works are completed.

The most notable features of the Act of Parliament which authorises these vast works are the wide powers of expropriation reserved to the Government and the provision for a State monopoly of the towing service on the Rhine-Weser Canal and its branches. It was part of the Government's plan to construct a deep canal the entire way from the Rhine to the Elbe, but the agrarian party would not hear of the idea, and for the present—though only for the present—that part of the scheme is suspended. On the

other hand, the Diet went beyond the Government's expectations in another direction, for when it asked for a million pounds for the purchase of land on the banks of the Rhine-Weser Canal, with a view to cutting out private speculators and reserving for the State the values created by its outlay, the Diet said, 'Be content, take two.' And two million pounds were accordingly voted for this purpose.

The navigable canal from Berlin to Stettin is already far advanced. It will have a length of 63 miles from Plotzensee to Hohenfathen on the Oder, while its average width will be 107 feet, and its depth $9\frac{3}{4}$ feet. There will be forty bridges, one of which will carry the canal over the Stettin railway, and four locks, rising altogether 120 feet, each lock capable of taking two vessels of 600 tons simultaneously. Later, a ship trough hoist will be added if the traffic justifies the expense.

While this scheme is being carried out at the cost of the State, the metropolis is enlarging its harbour and dock accommodation; and the District Council of the Teltow Circle is completing the construction of a canal connecting the Havel and Spree at some distance from Berlin, in order to take the transit traffic which has hitherto had to pass through that city; the latter scheme has cost £2,000,000.

Equally ambitious is a project now pending for the improvement of transport facilities on the main rivers and some of their tributaries. When in 1905 the Prussian Government at last persuaded the agrarian party in the Diet to accept the Canal Bill just referred to; that spoiled party made its assent conditional upon the introduction of dues on 'rivers regulated in the interest of navigation,' and the Government's undertaking was duly embodied in the Act as passed, with the proviso, 'The levying of these dues shall begin at the latest with the coming into use of the Rhine-Weser Canal or a portion thereof.'

The Government lost no time in preparing a scheme that should carry out its undertaking. Various improvement works were planned, and provision was made for raising the interest on the necessary outlay by dues as promised. The works on the Rhine comprise the regulation of the river from Sonderheim to Strassburg at a cost of £675,000; the deepening of the bed to the extent of 18 inches from St Goar to Mayence, at a cost of £1,560,000; the canalisation of the Prussian portion of the Main from Offenbach to Hanau, estimated to cost £195,000; the canalisation of the Bavarian portion of the same river from Hanau to Aschaffenburg, at a cost of £475,000;

and the canalisation of the Neckar from Mannheim to Heilbronn, costing £1,405,000—making a total expenditure of £4,800,000.

The Elbe improvements include the deepening of the bed of the river and the opening of a second channel at Magdeburg—works which are estimated to cost £2,250,000; while the improvements on the Weser include the widening and dredging of the channel of the river between Minden and Bremen, a work which will cost £200,000; and contributions are to be made to the cost of the barages by which both the Ems-Weser Canal and the Weser at low water will be fed.

The general oversight of each river will be placed in the hands of a River Board, upon which all the principal interests concerned will be represented. The idea is that the dues to be charged shall be uniform on all three rivers. The Government has declared that the object of the dues is 'not to earn surpluses for the State, but to cover the actual costs, or a substantial part of the costs, of the improvements by an inconsiderable addition to the present freightage rates.' Nevertheless, every tax means a burden for some one, and in this case the burden will fall heavily on the industrial towns far inland which obtain much of their food and fuel supply by waterway.

The Mannheim Chamber of Commerce has pointed out that the trade of that town alone—and chiefly the trade in corn, coal, petroleum, and timber—will be taxed to the extent of £60,000 a year.

But a good deal more was necessary beyond the preparation of this scheme of improvement works, the importance and utility of which no one contests. The pledge which the Prussian Government gave to the agrarians—without consulting the rest of the Federal States—implied the alteration of the constitution, since that instrument expressly prohibits the imposition of navigation dues on the natural waterways of the country. Hence the Government had to overcome two main obstacles—the opposition in the Federal Council of those States whose interests were identified with the continued freedom of the Rhine and Elbe, and the opposition of the European Powers which were parties to the Rhine and Elbe Navigation Acts, guaranteeing complete freedom of navigation upon those rivers—in the former case, France and Holland, and in the latter, Austria. Now that the Government has induced the Reichstag to make the necessary alteration in the constitution, it is superfluous to discuss the measures by which the opposition of one

State after another was bought off—that of Bavaria, for example, by the promised canalisation of the Main; that of Württemberg by the canalisation of the Neckar, and so on. It is sufficient to say that, while the commercial interests of Saxony and Baden in particular are as dissatisfied as ever, the difficulties with the Governments have been adjusted.

The task now remaining is to obtain the acquiescence of Austria, Holland, and France. That this acquiescence will be given there can be little doubt. Both as regards the Rhine and Elbe, Germany can fairly claim to be the predominant partner. Both rivers run for the most part through German territory, and they overwhelmingly carry German trade. Undoubtedly the measure involves the revocation of old treaties, but these treaties were concluded at a time when Germany had not control of its own destinies, and when its internal affairs were almost as much the object of international meddling as are those of Turkey or China to-day. Treaties are effectual only so long as there are behind them both the power and the disposition to enforce them; if either of these conditions is absent, a treaty may or may not possess legal force, but its practical value is gone. Such is the position of the Rhine and Elbe Navigation

Acts to-day. In its desire to void these Acts the letter of the law may be against Germany and with the other treaty Powers; but it is almost as absurd to suppose that a modern State and nation like Germany should agree to be told by outside countries what it may and may not do in the development of its waterways, as that England should allow the traffic of the Thames to be regulated by the Balkan States. Austria will make no trouble for friendship's sake, and France will probably agree on the ground of policy.

Holland's position is for the moment more uncertain. And yet Holland has the less justification for standing out, inasmuch as it has neglected to improve the navigation of its own portion of the Rhine, with the curious result that in German territory there is a far deeper draught than between the Dutch frontier and Rotterdam. It is significant that Holland has already been threatened with a retaliatory measure in the event of its refusal to agree to the proposed dues. The threat is the construction of a ship canal from the Rhine at a point near Cologne entirely through German territory to the North Sea at Emden, the existing Dortmund and Ems Canal being enlarged for the purpose. The effect of such a measure upon the trade

of Rotterdam would be disastrous. The cost of the project would be great, but for Germany the interests at stake are great, too and if there were no way of untangling the present controversial knot save this of cutting it, cut it would most certainly be.

Of schemes which as yet are only in embryo, yet the execution of which is quite within the range of probability, are a canal projected in the south from the Neckar to the Danube, to have a length of seventy miles, and to cost £5,500,000; and one sixty-four miles long from the Danube at Ulm to Lake Constance, to cost £4,000,000. The difference in levels to be overcome in the first case is 900 feet, and that in the second case 540 feet; but obstacles of the kind no longer damp the ardours of the German canal engineer.

While the waterways have thus been extended and improved, and while the traffic carried by them has increased by leaps and bounds, the sea and river ports have undergone a transformation not less striking. No schemes would appear to be too ambitious, no expenditure too large, for a German town to undertake when it is a question of meeting the demands of trade and industry and assuring future prosperity. Now, as ever, Hamburg leads the way. In addition to the £5,000,000

expended in the extension of its harbour and docks and their equipment when the Free City came into the Customs Union, a further ten millions are now being expended in extensions and improvements of various kinds. These improvements will affect the entire mouth of the Elbe and will benefit Altona and Harburg, as well as Hamburg. Towards the cost of the works of a general kind Prussia is contributing nearly £2,000,000, while Hamburg bears the whole cost of its own port improvements. Large harbour extensions are being made or are contemplated at Harburg, and higher up the Elbe at Magdeburg and elsewhere.

On the Rhine large new ports have sprung into existence during the last twenty years, and old ports have been enlarged and improved out of recognition. At the present time most of the principal towns on this river are increasing their shipping facilities, and to meet the development of the coal trade special coal docks are springing up at various points on the lower reaches of the river. Cologne has added an industrial dock; towns like Ruhrort and Duisburg, more particularly connected with the coal trade, have greatly extended their shipping facilities; and Düsseldorf, Crefeld, Neuss, and various small towns, like Cleves and Emmerich, have followed suit.

On the tributary Main the old city of Frankfort is renewing its youth, and is spending £3,500,000 upon the development of its harbour. So it is on the Weser, where Bremen is engaged upon a large scheme, costing nearly £2,000,000, including the construction of additional docks and the deepening of the river, so that large vessels may come up to the port instead of loading and unloading at Bremerhaven, and in a greater or less degree the same enterprise is being shown upon the other streams.

The administration of the waterways of Prussia might seem to be unnecessarily complicated, yet, while four separate Ministries of State are concerned in the matter, the method of devolution followed ensures both efficiency and expedition. The Ministry of Public Works has to do with the maintenance and improvement of the navigable streams and other public waters, the construction and maintenance of navigable canals in State ownership, and the construction of State docks on inland waterways; while it co-operates with the Ministry of Commerce in regard to shipping questions and the institution of river and navigation police, and with the Ministry of Agriculture in regard to dyke building, reclamation and

drainage works, the fisheries, the construction of barrages, and measures taken to prevent damage by floods and ice. The Ministry of Agriculture is primarily responsible for the river dyke system, works of reclamation, and fisheries as above mentioned, and it collects the dues leviable for the use of inland waters for other than transport purposes. The regulation of transport generally, including navigation and timber floating, and the administration of the river, navigation, and harbour police fall to the Ministry of Commerce; it is responsible for the maintenance and the security of navigation on the waterways, including the maintenance of the bed and banks of the same. Finally, the Ministry of Finance has the right to approve of transport and dock dues, both State and private. While these functions belong of right to the Ministries named, however, a large measure of devolution is exercised, and in practice the Government Presidents of the various provinces, helped by staffs of technical officials, exercise most of the functions of the Ministries concerned, on their behalf.

CHAPTER V

INDUSTRIAL CONCENTRATION

PERHAPS no specially German characteristic has proved of greater service in the struggle for commercial and industrial mastery than the faculty for organisation and co-operation. Individualism is good where it has free play, but under modern industrial conditions pure individualism is inadequate, and even were it not inadequate it is impracticable in many large spheres of private enterprise. The most striking expression of this instinct for organisation is seen in the remarkable growth of large undertakings. In German official industrial statistics the employment of fifty work-people connotes a 'large' enterprise, but in fact such enterprises are nowadays regarded as very small. A dozen years ago an establishment of 1000 work-people was gigantic, but to-day no number below that would in the estimation of the industrialists themselves qualify for admission to the ranks of 'large' undertakings. The occupation census of 1907 showed that there were 1423 industrial undertakings employing over 500 persons, and that the average of all was 1080. Of these undertakings 420 were in the mining, smelting, and saltworks industries, with an average of

1444 employees; 319 were in the machine and instrument manufacturing industries, with an average of 1120; 216 were in the textile industry, with an average of 790; and 108 were in the metal working industries, with an average of 880.

Again, while between the years 1886 and 1909 the number of share companies in Germany increased by 144 per cent. (from 2143 to 5222), the amount of their share capital increased by 203 per cent. (from £243,800,000 to £736,865,000). In 1909 there were 6 companies with a capital between £7,500,000 to £10,000,000; 5 with a capital between £5,000,000 and £7,500,000; 19 with one between £2,500,000 and £5,000,000; 28 with one between £1,500,000 and £2,500,000; 47 with one between £1,000,000 and £1,500,000; and 124 with one between £500,000 and £1,000,000—giving a total of 229 companies, each with a capital exceeding £500,000, figures of striking significance in view of the fact that thirty years ago Germany seemed to be the chosen land of the small *entrepreneur*.

The tendency to concentration is particularly strong in the coal, iron and steel, and electrical industries, and in banking enterprise; but it is also seen in retail trading

in the form of the great stores. Against the old political maxim 'Divide and rule,' the modern Cæsars of industry and commerce advance the principle 'Unite and conquer.' For years a hot fight raged over the theory of free competition, but now that free competition is every one's right, the men who clamoured for it have suddenly ceased to compete. The union now in favour may take various forms—a loose convention, a close combination, or a formal fusion or amalgamation—but whatever the form, the ends sought and, in fact, attained, are the elimination of competition and greater economy in working.

The extent to which concentration has been carried latterly may be illustrated by a list of some of the best-known enterprises with the capital they employ :—

INDUSTRY AND COMMERCE.

F. Krupp, Essen	£9,000,000
Gelsenkirchener Bergwerksgesellschaft	7,800,000
Allgemeine Elektrizitäts-Gesellschaft	7,750,000
Phönix Colliery Company	5,000,000
Deutsch-Luxemburgische Bergwerks Gesellschaft	5,000,000
Siemens-Schuckert Werke (Electrical)	4,500,000
Berliner Handels Gesellschaft	5,500,000
Hamburg-American Shipping Co.	6,250,000
Nord-Deutscher Lloyd Shipping Co.	6,250,000
Grosse Berliner Strassenbahn.	5,000,000

FINANCE.

Deutsche Bank	£10,000,000
Dresdner Bank	10,000,000
Reichsbank	9,000,000
Discontogesellschaft	10,000,000
Darmstädter Bank	8,000,000
A. Schaffhausenscher Bankverein	7,000,000
Commerz und Disconto Bank	4,250,000
National Bank	4,500,000
Mitteldeutsche Kreditbank	3,000,000

Here are nineteen undertakings with an aggregate capital of £127,750,000, or an average of £6,750,000. Nearly all these huge undertakings have reached their present form by the absorption of a series of allied and, as a rule, rival enterprises. The great firm of Krupp is no exception to the rule. Undertaking after undertaking has been acquired until the gigantic Essen enterprise, with all its ramifications, now employs no fewer than 70,000 persons; and if members of families are counted, the livelihood and fortunes of nearly 250,000 persons—or exactly the combined population of the four smallest German principalities—are dependent upon the prosperous working of this one enterprise. The amalgamated works comprise six coal mines, a number of iron mines, cokeries, six iron and steel works, including rolling mills, the famous cannon works at Essen, a large shipbuilding-yard, and a fleet of vessels for the

Rhine transport service, worked from Rotterdam. The various works of this firm consume 2,500,000 tons of coal yearly, most of which is obtained from its own mines.

The direct line of Krupp is now extinct, yet it generally happens that some masterful personality is behind the enterprises united in the modern 'combines,' and these he is said to 'control.' The influence of individual men like Herren Stinnes, Thyssen, Funke, Haniel, Kirdorf, and other industrial leaders of West Germany is enormous. So far has concentration gone that a well-known industrial leader said not long ago that the industry of Germany was to-day practically dominated by three hundred men. Herr Stinnes alone directs a combination which owns or 'controls' over twenty coal mines, seven iron works, many iron ore mines in various parts of Germany, as well as in Luxemburg and France, twenty-six trading and shipping companies in seven countries, and a number of wholesale coal depots for the handling of his firm's output.

The recent evolution of one of the largest of his enterprises well illustrates the energy and ambition of the present generation of coal and iron magnates. Ten or twelve years ago, the German Luxemburg Mining and Smelting Company was formed with

a capital of £50,000, on the ruins of a still smaller undertaking which had failed to keep abreast of the times. One by one additional undertakings were absorbed by the new company—coal mines, iron ore mines, smelting works, etc.—necessitating constant increases of capital, until the combination now represents a fusion of at least a dozen concerns, in Luxemburg and Westphalia, with a working capital exceeding £5,000,000. Not only so, but the success which was not possible to the small enterprise has attended the course of the larger, the shares of the company to-day being quoted at 75 per cent. above par. The colliery industry of the Prussian provinces of Rhineland and Westphalia is more and more passing under the domination of a few large combinations, insomuch that legislation had to be passed several years ago, with a view to protecting the interests of the mining population. In 1885 coal mining was carried on in the Ruhr basin by 114 separate undertakings; in 1904 the number had fallen to 91, and in 1910 there were only 55. Nevertheless, the output had increased threefold and its value twelvefold in the meantime. Twenty years ago the ten largest colliery combinations in this coalfield produced just over 14,000,000 tons, or about

one-third of the total output; in 1910 the ten largest combinations produced 49,000,000 tons, or nearly two-thirds of the total output. These same companies also controlled nearly one-half of the production of the Steel Syndicate, for many of the large colliery companies combine iron and steel manufacture with coal mining, and in some cases the collieries have been acquired simply for the sake of cheaper fuel. To-day some 200 collieries in the Ruhr coal basin, employing 356,000 work-people, are owned by forty-two companies or individuals, and eleven of these forty-two control no fewer than 171 collieries with 292,000 work-people, some combinations having 20,000, 30,000, and even 40,000 workpeople. The largest groups are the Stinnes group of over twenty collieries, employing 88,000 work-people; the Thyssen group of five collieries, employing 17,000 men; the six Krupp collieries, employing 13,000 men; the Haniel combination, controlling twenty collieries, with over 42,000 men; and the Waldthausen combination, controlling twenty-five, with 45,000 men. Other large colliery companies are the Gelsenkirchen Company, with twenty-one collieries and 37,000 work-people; the Harpen Company, with twenty-one collieries and 28,000 work-people;

the Hibernia, with eleven collieries and 20,000 work-people; and the Phoenix, with ten collieries and 19,000 work-people.

Perhaps the most important factor in the modern development of colliery enterprise in Prussia was the wide latitude given to prospectors by the mining laws passed in the middle of last century. Prior to that time mining prospectors were not at liberty to sink for coal wherever they chose, but were controlled at every turn by State authorities. Hemmed in by laws and regulations, by dependence on permits and sanctions, the prospector had little incentive to enterprise. It was the object of the Prussian mining legislation of 1865 to attract capital to the undeveloped stores of mineral wealth awaiting extraction, to ease the path of enterprise, and to offer to it the promise of more adequate reward. The State was to stand back so that the private adventurer might come forward. While, therefore, mining prospectors were henceforth to have a free hand, the State at the same time renounced its right to royalties.

For a long time the law of 1865 seemed to work well alike in the interest of private enterprise and of the public. It is recognised now that the State erred in abdicating too completely its wide powers of control and

regulation; but on the other hand industry was liberated from many obsolete impediments which had needlessly frightened capital and paralysed enterprise. The immediate effect was a large multiplication of mining undertakings. Coal prospecting became a favourite form of speculation, and the fortunes of many landowners were made by the opening up upon their properties of hitherto unsuspected stores of fuel. In course of time, however, unrestricted competition made coal mining no longer the profitable investment it used to be. The concentration movement set in, and this in turn paved the way for the syndicate.

In 1893, after several years of negotiations, the Westphalian Coal Syndicate came into existence, and it has asserted an increasing hold upon the colliery industry of North-west Germany ever since. The share of each allied colliery was originally fixed for five years at once, and during that period it might be increased only in the ratio that the aggregate output was increased from year to year. But this limitation to enterprise did not suit the large colliery companies, and they soon began to chafe against restrictions and to seek a way of circumventing them. This was found in one of the rules of the syndicate, which provided that when a colliery company

bought the property of another it acquired also its share in the aggregate output. Trading on this provision the strong companies began to buy up small collieries yielding little return, and then either closed them down entirely or greatly restricted their operations, transferring their quota of output to larger and more efficient mines, where the costs of production were lower and the profits higher.

The effect of this policy was that some mining villages in the Ruhr coalfield were almost depopulated. A great outcry was raised, the matter was much discussed in Parliament, and the Government siding against the colliery owners a new Mining Law was passed in 1905, giving the Government a conditional veto upon the future closing down of collieries. By this law the owner of a mine may be required to carry it on if its working 'promises a profit,' and according to the intentions of the Legislature such profit is held to imply interest and a reasonable allowance for depreciation and redemption of capital. Owners who fail to comply with the requirements of the State mining authorities may be heavily fined, and their works may be carried on at their expense, and in extreme cases be expropriated. It is not even necessary that the mining authorities

shall wait until a colliery has been stopped before moving; they may act on any evidence of intention that appears to them sufficient.

Hitherto the powers conferred upon the Government have not been seriously enforced, and the men who control the Westphalian colliery industry have no doubt of their ability to carry out their own policy without drawing upon themselves legal pains and penalties. For practical purposes the industry has already been captured by the great capitalists who are behind the powerful iron and steel interests of this part of Prussia, and whose spokesmen are found in strength both in the Legislature and the public Press. 'All the larger collieries,' wrote a leading German newspaper recently, 'have in the course of time formed Press departments, which were formerly conducted by jurists intending to follow a mining career, but are now for the most part conducted by young economists. These supply the articles by means of which the colliery companies seek to win public opinion for their views.' Nor is that all, for the coal and iron interests of the Prussian West have at their direct service, and even own, powerful journals which lose no opportunity of defending their interests and representing their opinions.

When the Westphalian Coal Syndicate was established, one of the main arguments advanced in its favour was that it would protect the smaller collieries from the pressure of the wealthy companies and combinations, for (so it was argued) they would have a guaranteed share in the output, and as output would be restricted so as to keep the supply within the actual demand the sale of this share at a paying price would be assured. The effect has not been as promised. Instead of proving a bulwark to the small undertakings, the syndicate has played into the hands of the great combinations. More and more private owners have given place to companies, and companies in their turn to combinations, controlled by powerful groups of capitalists and banks, until to-day few important collieries remain outside. The State itself has greatly increased its holding in colliery properties, and to-day it has a larger share in the coal output of Westphalia than ever before, while its virtual monopoly of the Saar coalfield remains undisturbed. In thus entering into competition with private enterprise the Government has avowed that it was actuated by the development of the combinations, and that, like them, it had material advantage in view. Replying to

the charge made in the Prussian Lower House some time ago, that the State mining department was like the Coal Syndicate in seeking a maximum of profit, the representative of that department candidly replied: 'I have never concealed the fact that the State acts just as private industry acts—when the wolves howl, we must howl with them.'

The extinction of the small collieries has been coincident with the multiplication of combined coal and iron companies—the so-called 'Hüttenzechen.' The small colliery undertakings were and are known as 'pure' collieries, in distinction to the undertakings which unite coal getting with smelting. More and more the 'pure' collieries are being pressed by the combined works, and eventually they will become insignificant both in number and output. Of the output of the collieries affiliated to the Westphalian Coal Syndicate, 79 per cent. fell to the 'pure' collieries in 1904, but only 58 per cent. in 1910, that of the combined collieries increasing proportionately. The coke output of the 'pure' collieries likewise declined from 60 to 47 per cent. of the total during the same period. Incidentally it may be noted that the high profits made on coal, owing to the syndicates, help many a combined company over the stile in

times of industrial depression. This was the case in a marked degree in 1908-1909, when coal paid dividends though iron was losing money.

The same struggle between 'pure' and 'combined' works is going on in the iron and steel industry, and again the cause must be sought in the irresistible movement towards concentration. To-day the 'pure' works, producing either iron ore, pig iron, or steel, are nearing extinction, and the mixed works are supreme. The advantage to the latter of combining coal and ore mines, smelting and steel works is enormous, since they are enabled to economise at every stage of the manufacturing process. Some of these works have gone further, and have added transport to their other enterprises. The firms of Krupp, Stinnes, Haniel, and Thyssen, and the Harpen and Gelsenkirchen Mining Companies all own fleets of boats which ply between the ports of the Rhine, carrying coal, ore, coke, iron and steel between one works and another as required.

Meantime, production falls more and more into the hands of a few large companies. In 1873 there were 244 separate iron works with 379 blast furnaces, and an average annual production per furnace of 9200 tons; but in

1910 there were (Luxemburg included) 99 works with 303 blast furnaces, and an average annual production of 149,000 tons.

In short, in whatever direction we look in Rhineland-Westphalia concentration is the order of the day, and it would seem that its limits are still far from having been reached. A recent report of the Essen Chamber of Commerce, a body entirely under the influence of the iron and steel industry, stated :—‘In the opinion of this Chamber it would prove a futile undertaking to resist the movement of economical concentration and resistance would be injurious to economic interest. The uncontrollable competition of other industrial nations, which is continually gaining strength, compels us to energetically aim at the attainment of the highest efficiency and the utmost reduction of the cost of production.’ That the altered conditions make for increased efficiency cannot be doubted, for the proof is seen in an ever-expanding export trade.

It is not only in the vestibule of industrial Germany that the policy of concentration is being carried out. The same movement has been engineered with consummate skill and complete success in the electrical engineering industry, whose principal seat is the metropolis. Here amalgamation and absorption

have succeeded one another so daringly and so rapidly in recent years that at the present time this industry is practically dominated by two or three powerful companies whose employees in each case run into tens of thousands, and when large works have to be executed they inevitably fall into the hands of one of these firms. A host of undertakings of small and medium size are scattered over the length and breadth of the land, but in general they live upon the crumbs which fall from the table of their opulent rivals.

Even amongst the miscellaneous electrical undertakings a few relatively large firms outweigh all the rest. Thus, the occupation census of 1907 showed that of 105 firms engaged in the manufacture of generating plant, 26 employed over 26,000 out of an aggregate of 27,000 work-people; of 593 firms engaged in the manufacture of electrical apparatus in general, 96 had an average of 380 work-people; in the accumulator and cable industry, 38 firms employed 12,000 out of an aggregate of 13,600 work-people. Since 1907, the figures have unquestionably altered greatly in favour of the large undertakings throughout the entire industry, and a few steps further in the policy of concentration would practically lead to the domination of

a huge trust, a development which would appear to be more than a mere possibility.

The nucleus of the most powerful combination, working from Berlin, was a company capitalised originally at a £1,000,000, though it now has a working capital of £7,750,000. The company is also interested in dependent companies to the extent of £6,000,000 more, and it has large holdings in at least twenty other undertakings of all kinds. It works in close association with several other mammoth companies at home and abroad in the same industry, and, finally, it is one of the principal partners in a bank for financing electrical undertakings. When the last increase of capital was made by this company during the present year, the new shares were issued at 200 per cent. The company has a staff of over 70,000 employees of all grades.

Germany is rightly proud of its electrical industries and their achievements. It is estimated that the electro-technical industry alone employs over 150,000 people, and that its production has a value of £20,000,000 a year. A few years ago the total amount of capital invested in electrical undertakings of all kinds in Germany was estimated at over £150,000,000, but this figure is far below the total to-day. During the five years 1906-10

alone, no fewer than £26,000,000 were invested in new electrical undertakings, and the multiplication of 'overland' power stations¹ adds constantly and greatly to the amount of capital sunk in this great industry. The exports of the electrical industry in 1911 exceeded £10,750,000.

The special works in the electrical industry are waging a keen struggle with the great combinations, which are not content with promoting and financing power and traction enterprises on profitable terms, but are endeavouring to secure the exclusive right to supply all the machinery and material required in the execution of their various schemes. It is significant of the industrial awakening which has occurred in Bavaria that the Government of that State, bowing to the pressure of public opinion, recently adopted measures to protect native enterprise against the invasion of the great electrical combinations of the northern State.

But the advantages of combination are often secured in the manufacturing industries where large firms stop short of fusion. One method is that of the cartel or syndicate, as will be shown in the next chapter, and another is the less formal device of an agreement

¹ See Chapter VII., pp. 148-178.

between competing firms for fixing prices, dividing markets, or pooling profits. Arrangements of the kind are commonly called 'interest conventions' (*Interessengemeinschaften*). Such an agreement exists between four of the largest firms in the chemical trade, having together a share capital of some millions of pounds. In this case, while each firm is free to carry on its business more or less in its own way, the combined profits are distributed in the ratio of their capital. Latterly the combination has acquired and worked a coal mine in the common interest. So, too, some of the largest pipe manufacturers of the Rhineland, after first amalgamating with firms providing raw material, have now pooled their sales for thirty years in advance through an organisation which, while not a syndicate, effects the same purposes of preventing competition, unifying prices, and economising in business costs.

The shipbuilding industry has so far kept out of the movement towards concentration and the trust. Several old-established undertakings are conspicuous, but the total number of shipbuilding yards exceeds forty. It is yet significant of the fascination of the prevailing idea of evading the disadvantages of competition, even where conditions are unfavourable to concerted action, that a writer in

the 'German Economic Journal' (*Deutsche Wirtschaftszeitung*) recently proposed a plan by which the German shipbuilders were to derive some of the benefits of monopoly without resort to formal combinations. To this end the great shipbuilding companies were to enter into a convention for the purpose of guaranteeing each other satisfactory dividends. If, for example, several such companies were, as a rule, found in sharp rivalry whenever contracts were offered, this rivalry was to be overcome, not by appeals to mutual forbearance, but by the offer of substantial inducements. One of the firms was to buy off the competition of the others, on the understanding that all contracts should pass through its hands, yet be executed by the yards jointly. The conclusion was that by the elimination of competition higher prices would be obtained and comfortable profits be earned all round. It does not seem to have occurred to the ingenious author of this device for insuring dividends that the German shipping companies have likewise to make profits, and that if they were unable to obtain ships except on exorbitant monopoly terms in Germany, they might be induced to build abroad. Even under present conditions far more merchant

ships are built abroad for German firms than are built in German yards for foreign buyers. The tonnage sent abroad by German yards in 1911 was 17,000, as against 62,000 tons built for Germany in foreign yards.

Finally, the same movement is seen in the world of finance and commerce. Some of the great banking corporations have formed *Interessengemeinschaften* by the exchange of shares. Not only has this arrangement been made between the large banks themselves, but most of the leading Berlin banks have in this way secured an interest in the more important provincial banks. The most noteworthy form of concentration in commerce is the 'department store' (*Waarenhaus*), which is a common feature of business life, not only in the capitals but in all large towns, and has already played havoc with the old-fashioned shopkeepers who for decades had prospered on the constancy of the 'regular customer.' So far has jealousy of the stores gone that, in order to appease the commercial middleman, the Prussian Government has imposed upon them a special tax, the proceeds of which go to the local government districts concerned. In 1911, 108 stores were liable to this tax, and they paid £1550 each on the average, and in the aggregate £167,300. Nearly half

of the stores had a turnover of £300,000 a year. -

So momentous a development as this could not fail to excite misgiving, and public opinion is by no means united in regarding it as in all cases a change for the better. The industrial middle class in particular is alarmed, apprehending that although the movement has so far been confined to spheres of enterprise in which they are only remotely concerned, pressure may come their way next. Those, however, who view the movement from the standpoint of the disinterested spectator are on the whole disposed to regard the growing concentration of capital as inevitable and not necessarily regrettable, and certainly as in the direct line of modern economic development and a step towards higher organisation and increased efficiency. So moderate and deliberate a statesman as Count von Posadowsky said shortly before his retirement from Ministerial office, 'The industrial middle-class movement, like Social Democracy, rigorously attacks combinations of capital. Certainly these combinations involve danger to the middle class, yet it cannot be ignored that combination denotes progress in civilisation. This applies to the stores, which are inseparable from our modern

means of communication. On the day that you abolish the underground railway and cheap communication in Berlin the stores are undone. Granted that large combinations of capital abuse their power, yet where is there a good and effective Trust Law? Freedom of trade was born simultaneously with freedom of speech and of the Press.'

It is noteworthy that the Social Democratic party, hostile though it is to private enterprise of every kind based on 'capitalism,' has looked with a lenient eye upon the development of industrial concentration and has even welcomed it as connoting a stage on the way to a 'future State' based on community of ownership of the means of production. The organ of the party, the *Vorwärts*, wrote some time ago: 'From the Socialist standpoint we view this process of concentration, the destruction and buying up of the small by the larger works, the combination of different undertakings complementary one to the other into gigantic enterprises under the direction of industrial magnates, with quiet satisfaction. It may be that the breaking up of the old works may here and there plunge the workers for a time into serious anxiety; yet viewed as a whole, this process of concentration denotes

great progress towards the socialisation of the means of production, and the growing pressure of capital upon the workers will only result in proportionately severer counter-pressure on their part.' Of course this tolerant judgment upon the concentration movement does not prevent the *Vorwärts* and the rest of the Socialist Press from vilifying the men behind it, but that is part of the day's work and duty.

One result of the growth of large undertakings and the aggregation of capital in fewer hands may be seen already in the increase of the dependent class. The last occupation census forcibly testified to the gradual extinction of the small independent *entrepreneur*. While the census of 1895 showed that 29 per cent. of all persons following occupations for a livelihood were independent, by the year 1907 the proportion had fallen to 23 per cent. Comparing States with a specially large industrial population, the decrease was from 27 to 21 per cent. in Prussia, from 31 to 25 per cent. in Bavaria, from 26 to 23 per cent. in Saxony, from 37 to 28 per cent. in Württemberg, and from 32 to 25 per cent. in Baden.

To take an industry of special interest to this country, while in 1882 there were in Germany no fewer than 255,000 separate

undertakings in the weaving industry, of which number more than one-half (157,000) were carried on by single individuals, in 1907 the number of separate undertakings had fallen to 67,000, and the undertakings carried on by single individuals had fallen to 81,000, or one-fifth of the number twenty-five years before. During the same period the number of persons employed in weaving decreased from 493,000 to 487,000, chiefly owing to the introduction of larger looms; the number of males decreasing from 337,000 to 250,000, and the number of females increasing from 156,000 to 237,000. To a greater or less degree the same tendencies are visible in all the industries in which machinery is used.

On the other hand, the tendency to industrial concentration has had one unforeseen development which may prove of far-reaching importance. It is the combination of private and public interests which has taken place in connection with many of the schemes for the supply of power and light from large central stations. The powerful companies which are behind most of these schemes first endeavoured to obtain from the public authorities interested permits to enter their areas, use roads, etc.—permits for which they were prepared to pay handsomely.

That arrangement did not long prove acceptable to the authorities, which found that they were giving away rights of indefinite value for insufficient consideration, and the plan of joint ownership was proposed as offering a fairer division of advantage. This is the basis of all central power and light projects now promoted, and in more than one State the Government will sanction these projects on no other condition. The proportions in which the public authorities and the companies provide the necessary capital and join in the profits differ according to circumstances, but as a rule a controlling voice is reserved for the former. Enormous sums of public money have, during the last few years, been invested in electrical undertakings promoted on this principle of co-partnership.

CHAPTER VI

THE CARTELS AND SYNDICATES

ANOTHER powerful factor in the industrial life of Germany to-day, closely allied to the concentration of capital already dealt with, is the syndicating and 'cartelisation' of rival undertakings in the same branch of enterprise with a view to the elimination or limitation of competition, and such a systematic co-operation as

may secure to the allied firms advantages which are beyond their reach so long as each fights for its own hand. This movement has now been in active progress for over thirty years, and has reached such large proportions that the Imperial Government some time ago appointed a commission of experts to consider its economic effects. So far the commission has been one of investigation only, and although it has published several volumes of proceedings, its labours do not appear to have ended.

These combinations take many forms, varying according to the industry and the special purposes to be served. At one end of the scale there is the convention fixing the general conditions (independently of prices) upon which goods shall be sold, and at the other end there is the fully-developed syndicate, which regulates production, prices, and sales, and leaves to the associated works merely the functions of producing the goods required and despatching them to the buyers indicated.

The syndicates have sometimes been described as the offspring of Protection. The view now almost generally accepted in Germany is that, while protective duties may greatly increase the efficiency of the syndicates as instruments for the restriction of competition and the maintenance of prices, they are not

absolutely necessary to their formation or success. Many syndicates, indeed, existed in Germany before protective duties were introduced in 1879. None the less, the negotiations which took place in connection with the Customs Tariff of 1902 showed the syndicated mineral and iron industries to be quite alive to the advantage of a secure home market.

Experience shows that cartels and syndicates thrive best where, in addition to the existence of a considerable degree of uniformity in working conditions and product, the industry is to some extent localised and the number of undertakings affected is so far limited as to admit of effective co-operation. Hence it is that outside the industries engaged in the production of raw material and half-finished goods the formation of combinations of the kind is difficult. By far the most important are those formed in the mining, metal, and chemical industries. The industries which have proved least capable of 'cartelisation' are the textile, shipbuilding, machine, leather and paper industries—industries given to great specialisation.

The last list of cartels and syndicates published by the Cartel Commission enumerated 385 organisations, 19 being in the coal industry, 62 in the iron industry, 11 in

other branches of the metal industry, 46 in the chemical industry, 31 in the textile industry, 11 in the wood and paper industries, 10 in the glass industry, 132 in the brick and tile industry, 27 in the industries connected with stones and earths (cement, lime, etc.), 17 in the food and tobacco industries, and 17 in other industries. A recent German writer holds, however, that the present number of these organisations is between 550 and 600.

Although the terms cartel and syndicate are used very loosely in Germany, insomuch that they have almost become synonymous in the public mind, the cartel is in practice a much less rigid form of combination than the syndicate. The commonest form of cartel is the 'price convention,' the purpose of which is to secure a certain uniformity in the conditions of sale. While, however, such a convention may go no further than the fixing of prices, it may regulate the conditions of payment, and even allot to the combined firms special spheres of influence. The syndicate, on the other hand, not merely regulates prices but takes the place of the affiliated firms in the market, leaving them, as a rule, only the function of producing goods of the kind and quality assigned to them. Carried on in their most rigorous

form, indeed, the syndicates subordinate the individual works in all matters except internal organisation. In that form they may be described as Socialistic organisations working for individualistic ends.

The eighty odd cartels and syndicates in the coal and iron industries probably outweigh in importance all the rest put together alike in the amount of capital represented and in their influence upon industry generally. One of the oldest and most powerful of the syndicates is the Rhenish-Westphalian Coal Syndicate, formed in 1893 for the avowed purpose of abolishing unhealthy competition in the coal trade—in other words, of regulating prices with an upward tendency. By the agreement upon which the syndicate is based the allied collieries agree to limit their output to the shares assigned to them and to sell to the syndicate which supplies the market at its own prices. To-day this syndicate controls the entire colliery industry of Rhineland-Westphalia, and, in consequence, the coal trade of North-west and much of Central Germany, since the cost of carriage largely disables the Silesian collieries from competing within these areas. The coal is sold to the public by associations of dealers formed under the direction of the syndicate and

subject to its control in all important matters. The costs of the syndicate are covered by a levy on the accounts of the allied companies; but this deduction is merely nominal, for it is naturally allowed for in the fixing of prices.

The output of the syndicated collieries now exceeds one hundred million tons a year, and only between 5 and 6 per cent. of the production of Westphalia is outside the influence of this organisation. The combined collieries, as we have seen, are of two kinds, the 'pure' collieries and the 'mixed' collieries, the latter combining coal mines with smelting works (*Hüttenzechen*). The mixed works enjoy a valuable privilege in the fact that up to a certain point the coal needed for their blast furnaces and other works is not counted as part of their quota. The result is that they are often able to work at full pressure when trade is slack and the 'pure' collieries are compelled to resort to short time. Moreover, the coal used for a company's own purposes is not liable to the *ad valorem* contribution payable towards the syndicate's war chest. The importance of these privileges may be judged from the fact that as much as 12 per cent. of the share in the coal output allotted to collieries combined with smelting works is used by the

companies themselves. The syndicate systematically adapts its prices to local conditions, and in distant markets meets awkward rivalry by concessions at the cost of consumers nearer to the source of supply. Hence it often happens that coal costs more within sight of the pit-head than several hundred miles away. The present agreement lasts until 1915, and every endeavour will be made to renew it on the present or very similar lines.

The metal trades which deal with crude or half-manufactured products are also governed by syndicates of a more or less rigid kind. These syndicates fall into eight principal groups. In the iron ore industry production is regulated by the Siegerland syndicate, to which thirty-five firms belong. There are four syndicates in the iron smelting industry, the most important being those for Westphalia and Upper Silesia, to which all the large works in North-western and South-eastern Prussia respectively belong. The Westphalian syndicate regulates, while the Silesian syndicate both regulates and sells, the production of the combined works. The former of these organisations was dissolved at the end of 1908 owing to the impossibility of inducing certain outside works—particularly at Lübeck, Stettin, and Emden—to join on acceptable terms, and because of conflict of interest

between the 'pure' smelting works and the 'mixed' works; but negotiations were resumed the following year with successful results, and since 1910 the syndicate has again been in force.

The dominating syndicate in the steel industry is the Steel Works Union, with its seat at Düsseldorf. The syndicate was formed in 1904, and originally comprised thirty-seven works; to-day the number is smaller, owing to the fusions which have taken place in the interval, but all the large steel manufacturing firms are in the combination. The syndicate has hitherto regulated the entire production of the affiliated works, but has sold only certain of their products, and has not interfered in the disposal of the remainder or in the prices charged. The products sold by the syndicate, known as 'A' products, are half-finished steel—pigs and blooms—rails and sleepers, and girders (form iron); the products sold direct by the works themselves, known as the 'B' products, are chiefly merchant bars, wire rods, forgings, and cast-iron pipes.

The steel production regulated by the syndicate amounted in 1911 to no less than 12,500,000 tons (more than half of which was also sold by the syndicate), as compared with a production of under 8,250,000 tons in 1904, when the syndicate was formed. Many of the

large works, which depend more upon 'B' than 'A' products, have long chafed under the undue restriction of their output of the former, and in view of the difficulty of arranging quotas satisfactory to all parties the new agreement concluded in 1912 for five years leaves the works free in future to produce as well as to sell 'B' products according to their discretion. The conciliation of the various conflicting interests—not merely the interests of 'mixed' and 'pure' works, but of works within the same groups—is a difficult task; yet the fact that it can be accomplished attests the value attached to the maintenance of the syndicate and justifies belief in its stability. Certainly the imposing block of buildings in Düsseldorf, known as the Stahlhof, in which the syndicate has its sale depots and offices, suggests both security and permanence, and in the largeness of its conception is not unworthy of the great enterprises which are united under its roof. Half a dozen secondary syndicates are dependent on the Steel Syndicate, which has the power to make or unmake them at will. The steel producers of Upper Silesia have a separate syndicate, on the lines of the Steel Works Union, but its operations are very limited by comparison. There are in

this industry seven other syndicates regulating different branches of production. A fourth group of metal syndicates regulates the ship-plate and tinplate industries; as a rule, they work in agreement with the Steel Works Union, which in some cases offers premiums on exported goods.

The wire rolling, wire rope, and wire nail works are united in five syndicates, which regulate production, prices, and sales both for the home and foreign trade. It is significant that two of these syndicates work through large banks with branches in various parts of the country. There are six syndicates in the pipe industry, having a common sale office, two of the largest being those of the gas and water pipe and boiler-tube producers. In the small iron trade there are syndicates in the needle, spring steel, ploughshare, screw, flat iron, window and carriage mountings, shoe iron, lock, and other branches of production; and in the iron-founding trade there are two syndicates. Finally, in addition to all these organisations of producers there is a group of powerful sale syndicates of dealers in the same trades formed for the purpose of preventing price-cutting where this is not done by the producers' syndicates themselves.

The most powerful syndicate in the

chemical industry is the Potash Syndicate, the history of which is of special interest, inasmuch as it was called into existence in its present form by Act of Parliament, and the Governments of several States are directly concerned in it. The syndicate was formed so long ago as 1879. The fact that Germany has a natural monopoly of potash and that this potash is found in a very circumscribed area made concerted action easy, and for a long time the syndicate worked successfully. The first syndicate combined the State mines belonging to Prussia and Anhalt and two private undertakings. The demand for potash increased so rapidly (owing to the great demand from agriculture and the large and growing export trade to America), and the profits of the industry were so large, that new works sprang up in every part of the potash area. It is said that the companies in the syndicate expended some millions of marks in fighting rival companies and endeavouring to prevent new competition, but without avail, and in 1909, when the time came for renewing the syndicate, the number of affiliated works was fifty-two.

Negotiations soon divulged a keen conflict of interest; some of the stronger works demanded impossible quotas of the production,

and the negotiations fell through. Thereupon two of the older companies at once concluded an agreement (afterwards annulled) with an American company for the supply of the greater part of the American requirements at very low prices. The rest of the works protested, and were supported in their attitude by the Prussian Government, which was equally interested with the private companies in the maintenance of prices. The outcome was the law of May 25, 1910, for the compulsory formation of a syndicate.

Ostensibly this law was intended to prevent the price of potash from falling below a profitable level owing to the inordinate competition prevalent, and to check the formation of wild-cat companies. An official agency fixes every year the amount which may be produced and the quotas which shall fall to the various works both for home and foreign sale, the shares being determined by the character of the mine and the efficiency of its general installation. New works must wait two years before being allowed to share in the output. Works may reciprocally assign any portions of their quotas up to 50 per cent. The costs of administration and of propaganda are covered by a due of 3½d. per cwt. of potash produced. The most novel

feature of this legal establishment and regulation of a monopoly is the provision that the wages and salaries of the employees engaged by the associated works shall not fall below the average of the years 1907 to 1909, and that the general conditions of employment shall not be inferior to those prevailing in the same years. Another original feature is the provision for setting apart a large sum for the purpose of advertising both at home and abroad - the value of potash for agricultural purposes, the expenditure of this money being left to the Federal Council. In 1911 £230,000 was expended in this way.

It is too early to judge of the ultimate influence of the syndicate, but so far it has not had the effect expected. No sooner was the law passed than new mines were opened and new companies were formed in large number. The Government hoped by the law to break down the domination of a few powerful companies which had become dictatorial. But the immediate result was the fusion of some of the old undertakings, while others at once strengthened their position by acquiring new works, so that the powerful interests, instead of being weakened, were merely reinforced by new combinations. Meantime, the industry has made further progress, and it may be

that the present restless speculation will in time give way to a more business-like spirit.

The one result which is certain to follow from the setting up of this monopoly is that prices will not be allowed to fall, while they will in all probability be increased. It is not likely that over-production will be prevented, for high prices will assert their inevitable influence in attracting new capital to the industry. It is admitted that working at full pressure half the existing number of mines would be able to supply the whole world with its present demand for potash. Nevertheless, the only way of securing a large quota in the output is by additions and extensions, in which already millions of money have been extravagantly invested. Since the law was passed the number of works has increased from 68 to 80, and the number of shafts from 76 to 97, and over 100 additional shafts are being sunk; for the more undertakings combine the more new adventurers come in and spoil the advantages of combination. The enemies of the syndicates triumphantly point to the history of the Potash Syndicate, as so far developed, as a convincing argument against Government attempts to reverse the natural course of well-known economic laws.

Another syndicate, the operation of which recalls the American trust in its most aggressive form is the Spirit Syndicate, formed of spirit distillers and manufacturers in 1897, but essentially an organisation for protecting the interests of the large landowners of East Prussia, who carry on brandy distilling in conjunction with corn and potato growing. From its own standpoint the syndicate has proved an unqualified success. Not only has it obtained largely increased prices for the distillers, but it has all but eliminated the wholesale middleman, since it trades directly with the retailers, and by the adoption of enterprising methods of various kinds—exhibitions, competitions, literature, and liberal advertising—it has done much to extend the use of denaturalised spirit for industrial and domestic purposes. The syndicate has never been particular as to the means by which it secured its ends. It dictates its own terms to the retail trade and compels every spirit dealer to sell exactly according to its orders; it seeks to crush out of existence the unwelcome rival who is attracted to the trade by the hope of high profits; competition amongst its own associates has been extinguished, and protected by the tariff the syndicate has achieved profits

beyond the dreams of ordinary avarice. Companies which were satisfied with dividends of 8 and 10 per cent. before the syndicate was formed are by its aid distributing regularly to their shareholders twice as much to-day. For somehow there is always good reason for keeping the price of the product high. If the potato harvest is poor, the blame is laid to the dearness of raw material; if the harvest is abundant, the advantage is sure to be counteracted by the extra costs of labour. One important purpose of the syndicate has not been effected, viz., the adjustment of production to demand.

A perfect library of books has been written in Germany on the syndicate question, with the result of accentuating rather than assuaging the controversy to which the movement has given rise. But while the syndicates have many severe and even furious critics they have also many stalwart defenders, and it is a notable fact that at least one of these occupies a prominent place in the party of Socialism.

It is impossible to accept at face value all the eulogies of the syndicates which appear in certain German publications. Not only have the syndicates able spokesmen in Parliament, but they both own and subsidise influential organs in the Press, and, because of the interested source of much of the open

defence of these organisations, the public shows a disposition to suspect all of it. The truth is that the syndicates are neither so black as they are painted by their enemies nor so white as they are painted by their friends.

Naturally most of the public opposition to the syndicate movement has been directed to the Westphalian Coal Syndicate, which touches the consumers' pockets most directly. Since this syndicate was formed, the selling price of all kinds of coal, and also of coke and briquettes, has greatly increased. There is less fluctuation, but the reason probably is that the prices at their lowest are high enough to give a sufficiently satisfactory return. Admitting the higher prices, the syndicate points to the dearer cost of labour and of production generally, and contends that but for its influence, prices would have risen still more. The public pays no regard to causes, however, and in its judgment the syndicate stands condemned because fuel is not as cheap as ten or fifteen years ago.

From the standpoint of industry it is complained that the syndicates in raw material have crushed out of existence a host of small undertakings, have seriously increased the costs of production in the manufacturing trades affected, and in their eagerness

to control business at every stage have more and more converted the merchant into a mere commission agent, who sells the goods supplied to him by favour of the syndicate, on the syndicate's terms. On the other hand, it is claimed on behalf of the syndicates that they enable producers to keep in closer touch with market conditions than is possible when every individual manufacturer goes his own independent way; that to this extent production is intelligently regulated, the risk of and the loss by over-production are diminished, and the fluctuations in employment are less violent, and that all these effects tend to the advantage of industry and trade generally. The late period of trade depression is a test to which the friends of the syndicates point with a pardonable satisfaction; never before was an economic 'crisis' overcome with so few evidences of a disastrous collapse, and it is contended that the trades which rode the storm most successfully, and on the whole suffered least, were those in which the influence of the syndicates is most powerfully exerted.

There is no doubt also that some of the syndicates have powerfully stimulated foreign trade, particularly in times of depression, when the home market fails. Thus in the

last period of reaction the syndicated coal trade was able not only to maintain but to increase the proportion of its output sold abroad; this proportion averaged 14 per cent. in the good years 1906 and 1907, but increased to nearly 16 per cent. in 1909. The same thing was experienced in both the coal and coke trades in the years of depression following 1900.

Similarly in the iron and steel industry the influence of the syndicates was plainly seen in the forced exports which took place in 1908 and 1909. The following table shows the excess of exports over imports of various syndicated products of this industry in a year of 'good' and a year of 'bad' trade:—

EXCESS OF EXPORTS OVER IMPORTS, IN METRIC TONS.

	1907.	1909.
Blooms, raw rails, ingots	219,298	467,216
Rough plates	157,968	224,197
Fine plates	76,080	96,075
Forge iron in bars	666,501	707,956
Drawn wire	198,427	340,243
Wire nails	69,153	67,606

Owing to the stagnation in railway construction all over the world in 1908-9, the exports of rails were not maintained in these years to an equal degree. Nevertheless, the figures as a whole justify the judgment of a German authority, whose attitude towards the syndicate movement is severely critical,

yet who frankly admits that 'the merit of a colossal increase of exports in time of crisis undoubtedly remains to the syndicates.'

At the same time, what is food for the syndicated works is often poison for those who are outside the protected circle. Much of the crisis export trade is unquestionably done at the expense of the home consumers. Here is seen the double advantage of monopoly combined with protective duties. Owing to the high prices which a syndicate is able to obtain at home, it is able to sell abroad either at small profit or, if it seems judicious, at an absolute loss, and yet, on the whole, secure good average prices and satisfactory returns. The exports are further stimulated by the payment of export premiums to the affiliated concerns, which are to that extent able to sell more cheaply in foreign markets. These advantages have been used to the full in times of bad trade, and the charge of 'dumping' is one which the syndicates in the metal trades cannot evade.

Dr Morgenroth, one of the later writers on the syndicate movement, comes to the conclusion that one of the most uncontrollable effects of the 'dumping' of raw material and half-manufactured goods by powerful syndicates and cartels is that foreign

competition in finished goods is encouraged in the home market. He advances a multitude of facts and figures in proof of this proposition, many taken from the proceedings before the Cartel Commission, but others collected by independent inquiry. He also establishes beyond doubt his contention that some of the combinations in the iron and steel industry have inflicted great injury upon home manufactures, owing to their policy of selling dearly at home and cheaply abroad. By exporting half-manufactured material at low prices the syndicates which produce these goods injure the manufacturers of the finished articles, by exposing them to severer foreign competition both at home and in neutral markets. The export of cheap plates to Holland has given great stimulus to the shipbuilding industry there, and the export of cheap rolled wire has cut off Germany's exports of wire nails to the same country.

Quite recently a Cologne newspaper wrote: 'Although shipbuilding for the Rhine navigation has in the main to supply vessels for Rhine harbours like Duisburg, Ruhrort, Mannheim, Cologne, Düsseldorf, Frankfort, Mayence, and Strassburg, its principal centre is in Holland. Within Dutch territory at the mouth of the Rhine and Meuse there are

between thirty-five and forty shipbuilding yards, employing 4000 work-people, engaged entirely in building for Germany, while on the entire German course of the Rhine there are 118 yards, employing only some 1800 work-people; 76 per cent. (in tonnage) of all towing vessels trading on the German Rhine are built in Holland, though in the case of steamships the proportion is smaller.'

The explanation of this anomaly is the policy of the iron and steel syndicates in exporting raw material at prices below those charged at home, the effect of which is that a Dutch builder saves 5 per cent. of the cost of plates alone. In the same way the iron construction works of Holland are said to owe their efficiency to cheap German steel.

The attitude of the Socialist-Labour party towards the syndicates is an equivocal one. From the Socialist standpoint these large combinations are approved, like the monopolist companies and the great stores, as being a step on the way to the socialisation of all the means of production. From the standpoint of labour and wages, the syndicates are fair targets for trade union attack, and they do not escape it. The syndicates reply with perfect truth that so far from wishing to influence wages unfavourably they have no

direct interest in the question *qua* syndicates, and, in fact, neither deal with the labour question directly nor seek to influence the combined firms in their relationships with employees. They point, further, to the fact that, inasmuch as it is the object of the syndicates to assure to manufacturers a proper return on capital by creating 'harmony of interest,' they are bound incidentally to improve the position of labour. Certainly the returns of wages paid by the firms insured in the Trade Associations which administer the Accident Insurance Law show a steady increase in average earnings. Taking the colliery industry in particular, as being specially under syndicate influence, wages show a steadily rising tendency, subject to temporary checks due to trade depression. Of the 357,000 work-people of all grades employed in the collieries of the Dortmund mining district in 1911, 72 per cent. earned average daily wages of 5s. or upwards; the proportion in 1910 was 68 per cent.; in 1909, 65 per cent.; in 1908, 70 per cent.; in 1907, 68 per cent.; in 1906, 57 per cent.; in 1905, 45 per cent.; in 1904, 43 per cent.; and in 1903, 36 per cent.

It is a common objection to the syndicates which govern the colliery industry that they have been the cause of the closing down of

many mines. It is true that many mines belonging to the large colliery combinations are no longer worked, but for this the syndicates are not to blame. The proprietors, in pursuance of a policy of efficient management, have simply applied the principle of the survival of the fittest, working at higher pressure the mines which yield the best results, and abandoning for the present those offering under existing conditions an inadequate margin of profit. The effect of this policy has, of course, been a certain displacement of labour, but this is by no means unusual in the coal mining industry, the working force of which in Germany is more subject to fluctuation than that of any other great industry. On the other hand, increased output on more remunerative conditions has been the result, and it is contended that the workmen have been the gainers by the change.

An impartial estimate of the syndicates and their operations requires the admission that they have achieved great results in the higher and more efficient organisation of industry, in the regulation of prices and of employment, and in the more successful cultivation of the foreign market. These gains have not been unaccompanied by disadvantage to certain sections of the

community in their capacity as consumers, but as yet it cannot fairly be contended that the syndicates have flagrantly abused their powers, unrestricted though these powers are by law or administrative measures.

Hitherto the attitude of the Government towards the syndicates has been that of the mildly critical onlooker, disposed to await developments patiently, and not desirous of taking action until compelled. Whenever the syndicates have been formally indicted in Parliament it has given the assurance that they will never be allowed to transgress the limits which public interests impose, but beyond appointing a commission of inquiry, there has been no indication in official circles of a strong bias against these organisations. To some extent, indeed, the Prussian Government may be said to have tied its own hands, owing to its complicity in syndicate practices. Not only was it the most active agent in the formation of the monopolist Potash Syndicate, but after refusing many invitations to join the Westphalian Coal Syndicate it capitulated in 1912. It is true that it has not yet formally become a partner in the combination, but it has begun by selling to the syndicate the whole output of its mines in the west of Germany—reserving the Saar and Silesian

mines for management in the old way—an arrangement which enables it to have all the advantages, without complying with the actual formality, of membership.¹

It is true that a strong verbal attitude was taken in the Imperial Diet in 1908 by the present Chancellor, Herr von Bethmann Hollweg, who said (March 8): 'I am of opinion that we should very thoroughly consider whether it is not necessary to assert direct influence over the syndicates by legal regulations. It is inevitable that the effects of such intervention would not be restricted to the circumstances of the cartels affected, but would exercise a great influence upon the entire economic life of the country; hence only such measures should be taken as offered a certainty that we should actually effect an improvement. The Government appreciates the seriousness of the question and is determined in its wish to check the cartels, should they go beyond legitimate limits.'

The idea of the State holding the balance between producer and consumer in this scrupulous way is attractive, but in practice the Prussian Government has sold its own coal always as well as possible, and has

¹ The Government's connection with the syndicate has not proved of long duration, for notice to terminate the agreement was given in September, 1912.

rightly sought to make the fiscal mines a source of public revenue. During the whole time it stood outside the Westphalian syndicate it was ready and willing to benefit by much the same commercial devices which have kept the syndicate's coffers full. The State mines have even followed the syndicate's tactics so far as to sell coal abroad more cheaply than to home consumers, as when in 1906 and 1907 Saar coal was sold to Austrian industrial buyers 30 per cent. below the prices charged to German works. In a memorial addressed to the Prussian Lower House by the colliery proprietors a short time ago, it was shown that the fiscal collieries in the Saar basin had even supplied coal for the State service at 3s. per ton more than the State was paying private colliery owners in Westphalia. The truth is that inasmuch as the syndicated coal virtually controls the market the State mines benefit by monopoly prices; the syndicate bears the odium, and the State reaps the advantage. Ministers may now and then profess concern for the interests of exploited consumers, yet it is doubtful whether they would welcome the abolition of the syndicate unless its place were to be taken by a more powerful monopolist still—the State.

As for State interference, the spokesmen

of the syndicates profess that they do not object to any reasonable measure of legal regulation, recognising that in industry, as in every other department of national life, new conditions may call for the modification and adjustment of existing laws. What they object to, and to some extent fear, however, is regulation in a narrow and officious spirit, the effect of which might be to hamper and cripple these organisations by petty interferences. They assert that the syndicate represents imperialism in industry, and can only be carried on in an imperialistic spirit.

While, however, the Government is being urged by one party to subject the syndicates to legal regulation, it is being invited by another to carry industrial concentration a step farther and to embark upon a bold policy of nationalisation. The Essen Chamber of Commerce, which has consistently defended the syndicates against their detractors, said truly, several years ago: 'Let there be no mistake, these combinations are simply the beginning of a new development, and because this development is in the main dependent upon factors beyond our control the ultimate goal cannot be foreseen.' It is more easy to see now than when these words were written, that the nationalisation of the coal mines is

at least a practical possibility, though should such a proposal be made, it will probably be defended by the need for revenue rather than by concern for the convenience of coal consumers.

The idea of State monopolies is no new one in Germany. Thirty years ago (1880-82) Prince Bismarck proposed to set up tobacco and brandy *régies*, not in the interest of any high social theories, but for the one purpose of obtaining more money from two exceptionally productive sources. Since then the need for money has increased with the growth of the defensive forces; and, with the indirect duties now at a height which cannot be exceeded with safety, with the project of an imperial income tax blocked by the opposition of every individual State, and every individual commune within every State, whose vested interest in this form of taxation is too great to be easily bought off, with the landed interest sworn to prevent any radical reform of the death duties, and with the list of fancy taxes exhausted, the Government's only hope now lies in the discovery of some new and large source of revenue. Neither the tobacco nor the spirit industry has yet been nationalised, but they have been compelled to purchase indemnity by considerably increased taxation, and if these two commodities were

now converted into State monopolies they might no longer yield an extra return proportionate to the vastness of the economic disturbance which would be caused.

It is otherwise with the coal mines, for the State is already the largest and most successful colliery proprietor in the country, and is in possession of the knowledge, experience, and machinery necessary to the administration of larger enterprises of the kind.

Early last year the Government hinted at the possibility of State monopolies without then suggesting their character. Speaking in the Reichstag on May 4, 1912, the Secretary of State for the Interior said: 'In the syndicates are growing up organisations which are assuming a character of private monopolies, which may become a good deal more dangerous than State monopolies. I consider it not improbable that we may have to gradually transform private monopolies into State monopolies. On the other hand I am convinced that we are not yet ripe for such a measure.'

This declaration of policy has been followed by the announcement that at an early date the Imperial Government intends to establish a monopoly in petroleum, with a view to breaking down the tyranny of the American Standard Oil Trust. It is not the intention

of the State itself to trade in oil; it will transfer the monopoly to a company, which will be subject to its control. The necessary capital will be supplied partly by a group of banks now interested in petroleum companies and partly by public subscription. The Government will, from time to time, fix a maximum price for the wholesale sale of oil, and within this price the company will be free to make as much profit as it can; but only one-fifth of such profit will be divisible amongst the shareholders, and the rest will go to the State, to be used for 'purposes of social utility,' and, first of all, for the formation of a pension fund for time-expired soldiers. If the maximum price has to be exceeded, the company will have to be satisfied with the market rate of interest, the Empire receiving nothing.

The company to be formed will take over all existing wholesale businesses, with their warehouses and plants, including tanks, tank wagons, tank ships, etc., in seaports and on rivers, railways, etc.; and in case of inability to arrange for a transfer by agreement, powers of expropriation are taken. Compensation will be paid for all property thus taken over and for goodwill, and *employés* (work-people are not mentioned

especially) whose services may not be required further will be pensioned off. The retail trade will not be affected by the monopoly. There is no idea of boycotting the Standard Oil Company, so long as it is prepared to sell on terms equal to those which may be offered elsewhere; but it is intended that supplies shall be obtained from as many suitable sources as possible, and the company will own and work its own oil tank steamers. The extent of the field of operations open to the company may be judged by the fact that 720,000 tons of petroleum have to be imported yearly.

On behalf of the Government the assurance has been given that the monopoly is not intended to become another source of indirect taxation or to provide revenue at all, though it is added that there is no reason why a national enterprise of this kind should be established for the sake of private individuals, hence the share of four-fifths of the profits reserved for the State. It is probable, however, that the small margin of gain left to the company will compel it to keep the price of petroleum as high as possible.

The establishment by law of a virtual monopoly in potash—a monopoly in which the State has a substantial interest—has

suggested the nationalisation of this industry likewise in the interest of revenue. It is claimed that if that were done, and potash mining were concentrated, the economies would be so great that without any increase in the price of the product a profit of several millions a year could be made on the present output. The value of the potash mines now in work has been estimated at £35,000,000, and of those about to be opened £10,000,000, implying a purchase price of £45,000,000. To meet that outlay an interest and redemption fund of £2,500,000 a year would be necessary; and it is contended that if, instead of potash being mined in over a hundred places, in many cases under uneconomic conditions, it were raised only in a limited number of efficient works, these being worked at their full capacity, there would be an immediate surplus of from two to two and a half millions on a sale of eight million pounds, rising in the course of a few years to twice or thrice that amount, as the use of potash for manurial purposes increased.

It has even been suggested that the electrical industry might be socialised in so far as the generation and supply of current for light and power are concerned. Here, too,

the way has been prepared by the fusion of nearly all the large electrical undertakings, and by the creation of a network of overland power stations largely owned by public authorities. The idea is not impracticable, and its realisation on large lines might prove an immense boon both to industry and agriculture.

In any such schemes the Government might count on the certain support of at least two powerful parties—the agrarian party, which would welcome any alternative to increased taxation on land, and the Social Democratic party, which would hail nationalisation as a practical earnest of the ‘State of the future.’ Hitherto the Socialists have watched the growth of the syndicates with the quiet satisfaction of men who believe, or believe that they believe, that these gigantic combinations are paving the way for the realisation of their economic ideals. In their view the syndicates have not only shown the way, but have created the machinery and prepared the public for a further and final step in the direction of industrial concentration. In the words of a recent Socialist writer: ‘The great industrialist, as the servant of capitalistic tendencies, is even against his will a powerful revolutionary who prepares the way for Socialism as few others are able to do.’

CHAPTER VII

CENTRAL POWER AND LIGHT SUPPLY

HOWEVER one may judge the great industrial combinations which have been described in an earlier chapter, the merit rests with them of having first recognised the importance for economical production of cheap power, and of having brought such power within reach of large sections of the community. The promotion, upon a national scale, of undertakings for the wholesale production of electric current is an enterprise of the greatest moment, and may open up a new era of industrial development in many parts of Germany. Incidentally this departure has revived the old question of the relative advantages of corporate and private action in the provision of works of public need. Of public utility services, that of water supply was always more or less exclusively in public hands in Germany; where it was otherwise, and large new sources became necessary owing to growing population, the companies in possession of the ground were as a rule willing enough to be bought out. It was otherwise with gas, first introduced into Germany by private capital, which in

some towns was largely of English origin. This lucrative field of enterprise was disputed very tenaciously, and even to-day Berlin is in part supplied with gas by a private company, the 'English Gas Company.'

When the commercial value of electricity became recognised the municipal authorities, learning wisdom by experience, were quick to establish their own works. They made one serious mistake, however, for in their eagerness to keep out private enterprise they overlooked the advantages to be gained by concentration. Every town was satisfied if it could make sure of its own administrative area, and the result was the creation of a large number of works of a small and economically inefficient type. The vast majority of the municipal electricity plants have a quite insignificant capacity; in 1909, 80 per cent. of the whole had a capacity of under 500 kilowatts. Here private capital has seen its chance, and during the last few years, helped by improved machinery, steam turbines, large gas engines, etc., the use of coke oven gas, and the large industrial banks, it has regained much lost ground.

Developments now in active progress indicate clearly that in regard alike to electricity and gas the principle of municipalisation is

seriously assailed in Germany, and that the old battle between private and public enterprise is to be fought over again, with this difference, however, that the struggle will not now rage over an abstract proposition but over the practical question whether local government authorities, acting independently, are able to offer to the community the advantages which can be secured by the concerted efforts of powerful private capitalists. The important schemes to which the electrical industry is directing its attention at the present time are connected with the setting up of what are known as 'overland' central stations (*Überlandszentrale*) for the production of current on a large scale and for its sale in bulk to public authorities or its distribution direct to the consumers.

In so far as the electrical engineering companies have taken up this branch of enterprise they have been spurred by the necessity of finding new outlets for their ever-increasing productive capacity. For some years the steady growth of this industry was maintained—in a country in which both the State and the municipal authorities on principle keep their work at home, as far as is possible—by the electrification of the tramway systems and the increasing demand for

installations for municipal and industrial undertakings. When these sources of work, for a time prolific enough, ceased to keep pace with the increase of their plants, the companies had to look in other directions for employment. Several of the largest companies have constructed urban and inter-urban electrical railways, like the high-level and underground lines already built or still in course of construction in Berlin, and inter-urban tramway lines in various parts of the country. Strong pressure has been employed to induce the State railway authorities to electrify local lines with heavy traffic, and though not much has been done in this direction as yet, several schemes of the kind are under consideration in Prussia and Saxony, and the bold action on these lines which is now being taken by the Bavarian railway administration is an earnest of important developments in the immediate future.

A field of enterprise offering more immediate results has, meantime, been found in the promotion of 'overland' power stations for the supply of electrical current within wide areas from a central generating plant, and one or more distributing centres, according to the position of the communities to be served.

The number of the larger overland power

stations established up to 1911 was 110, of which 52 were in Prussia, 33 in Bavaria, 14 in Saxony, 5 in Württemberg, and 6 in Baden.

In order that the utmost advantages of wholesale production might be secured, situations have in some cases been chosen where water-power could be obtained cheaply, or the central stations have been put down near collieries, where coal for fuel could be bought for the bare cost of getting. There are large central water-power stations in the Urft Valley, on the Eifel, in the Bober and Quies valleys in Silesia, the Möhne Valley in Westphalia, the Eder Valley in Waldeck, and similar stations are being constructed in Bavaria, Baden, and Alsace-Lorraine. Some of the most important stations have been established in connection with collieries in Westphalia and Upper Silesia. Thus the 'Hibernia' Colliery Company supplies electric current to the Westphalian Electricity Works of Bochum, which serve the towns of Bochum, Herne, and Witten, and several large rural districts, while the 'Rheinpreussen' collieries supply current to Crefeld and Homburg.

The efforts of the companies which turned their energies in this direction were favoured by the fact already stated, that for the most part the municipal central stations have

been built for the satisfaction of purely local needs and have not contemplated the supply of large surrounding areas. At first the companies were content to capture populous semi-urban areas unappropriated by such towns, but it was not long before they aspired to supplant the municipal power stations within their own spheres of influence. Owing to the favourable conditions upon which they are able to work, the companies have been able to buy out many municipal undertakings on terms advantageous to both sides. Thus several municipalities near Berlin have recently discontinued the generation of current by their own works and have agreed to buy on very favourable conditions from electrical companies. Where power is supplied in bulk to municipal authorities the latter are, as a rule, free to distribute it within their area at their own price, but the power generating works may also undertake the business of distribution, in which case a town is spared the expense of installations and simply shares profits according to the contract agreed upon. More and more these undertakings are ceasing to be exclusively worked by private capital, however, and the plan of allowing the affiliated communes to own a certain proportion of the shares—as

a rule about one half in the aggregate—has been adopted as a concession to the advocates of municipalisation. Thus the municipality of Strassburg does not own its own electrical works but holds more than half the shares in a company which supplies not only that town but some seventy communes in Alsace-Lorraine and Baden. As a result of the company's operations in 1909 the municipality under its agreement received dividends of £21,850, with a further share in the profits amounting to £16,790, so that after deducting 4 per cent. interest on the capital invested a balance of £21,850 remained in reduction of local taxation.

The latest large town to ally itself to a private enterprise of this kind is Cologne, which has just concluded a thirty years' contract for current with a lignite mining company. The company binds itself to supply to the municipality, and the latter binds itself to purchase from the company, all the current needed for the present and future area of the municipality in so far as the current required cannot be supplied by the existing municipal electrical works or electrical works belonging to communal areas which may be incorporated during the term of the contract. The town is to be allowed to continue, maintain in good condition, and

improve its existing works or works of communal areas that may be incorporated, or it may, if it desires, close down these works and take all its supply from the company. The contract also secures to the town a sphere of influence outside the municipal area, within which the company undertakes neither to supply current nor to lay cables. A sliding scale of charges has been arranged, and it is stipulated not only that the town shall pay less for current than the price at which it could produce it in new works of its own, but that it shall benefit by all economies in production which are due to the adoption of improved technical methods. Finally, the town is to be allotted a considerable holding in the company and is to be represented on the board of directors.

Perhaps the most important of these large central power stations so far is that of the Rhenish-Westphalian Electricity Works Company at Essen. This undertaking was begun, if not as a municipal venture, at least on municipal initiative, for the supply of electrical current to the town of Essen. It was established on a company basis in 1898 with a capital at the outset of only £125,000. Two enterprising coal and iron kings, Herren Thyssen and Stinnes, soon recognised the

possibilities of the works if developed as a central station; and, after first acquiring the majority of the shares, in 1902 they began to reorganise the company on bold lines. Their idea was to create several large stations from which the entire industrial district of Rhineland-Westphalia would eventually be supplied with current for mines and tramways, for street and house lighting, for factories and public buildings, etc. The municipalities were to be dealt with as units, supplied with power in bulk, and left to distribute the power within their own areas. As a first step the Essen central station, which lies in the neighbourhood of one of Herr Stinnes' collieries, was extended and equipped with the most modern technical appliances, the steam for the working of the dynamos being furnished by the colliery plant, where it is produced by the use of inferior coal unfit for the market, and of waste gases from the coke ovens. The company tried to buy out the municipal electrical station at Dortmund, offering £550,000 for a property which stood in the books at £885,000, and a share of the company's yearly profits, but as the Dortmund Corporation was doing well with its works it declines the overtures. Three other central stations have been acquired, however,—the

largest being at Solingen and Brühl—and each serves to supply a specified area. Other smaller works have been bought and either closed down or kept as reserve stations. During the last ten years a large number of urban and rural districts—the former including Mülheim and Gelsenkirchen, in addition to Essen—have one by one been affiliated to the Essen central station as customers, until to-day, working with a capital of three million pounds, the Thyssen-Stinnes concern supplies some eighty communes, while its ultimate aim is to become the producer of electric current for power and light for the entire industrial district of Rhineland-Westphalia. Current is supplied at 3·6d. per kilowatt hour for light and 1·7d. for power. With these rates everybody appears to be satisfied, though as the contracts have as a rule been made for twenty-five or thirty years the company has assured to itself the advantages of any future cheapening of production. About 40 per cent. of the shares are held by communal bodies, which are represented on the board of directors and, by means of committees, keep in close touch with the management.

A unique feature of the Essen company's method of working is its series of reciprocal contracts with large industrial undertakings

—including in particular Krupp of Essen, the Gütehoffnung Smelting Works, the Gelsenkirchen Colliery Company, and the collieries of several other companies—whereby the station agrees to supply these undertakings in emergencies with current needed beyond their own normal production, thus relieving them of the necessity of maintaining reserve power, while they in return agree to supply to the station all current not required for their own purposes. Hence the Essen central station has been called the ‘electricity bank’ of the Rhenish-Westphalian industry.

Another large overland power company is the Westphalian Electricity Works of Bochum, working with a share and loan capital of £800,000. Power is generated at ten colliery stations and the area supplied comprises a number of urban and rural districts, with which agreements for twenty-five years have been concluded. If at least three-quarters of the communal authorities interested agree, they may, within the first thirteen years, acquire the undertaking on paying twenty-five times the net profit earned in the previous year, with a minimum of 150 per cent. of the capital invested.

The largest of the Berlin electrical companies has a controlling voice in a number of central power works. Its last feat is the securing of

a State concession to use the highways throughout the duchy of Gotha for the conveyance of current. The company, on the other hand, undertakes to promote another company which shall erect a power station capable of supplying current to every part of the duchy, and to pay to the State a fixed proportion of the yearly revenue by way of consideration for the monopoly of the roads. During the first year the company is to supply the seven 'towns' and thirty-four other communes of the duchy, and within the following four years all the remaining communes are to have current brought to their doors. The company also undertakes to construct a series of electrical secondary and light railways, and to add to the number of these as may be required. The agreement is for fifty years. For the carrying out of its project the promoting company has acquired an existing Gotha electrical company and quadrupled its capital.

This is only one of many undertakings of the same kind in which this Berlin company is concerned. It may be said that the electric current which supplies a considerable part of Germany, in city and town, village and hamlet, factory and workshop, farm and forest, with motive power, light, and heat, for every purpose to which electricity can be

used, is virtually turned off and on from the office of this mammoth enterprise in Berlin.

In other parts of Germany also electrical companies have received State encouragement. Thus in the Saar district of Prussia the State is understood to have come recently to an arrangement with a company for the development of its existing colliery power station into large central works, from which current will be supplied to the south-western portion of the Rhine Province, and the adjacent districts of the Palatinate and Alsace-Lorraine covering a radius of from fifty to sixty miles from Saarbrücken. A noteworthy instance of something like a 'deal' between the State and a private undertaking was afforded recently when the fact came to light that the Bavarian Government was behind a large electrical company in a scheme for supplying current to urban and rural communes, as well as to private consumers, within a large area of the Palatinate. The promoters certainly played their cards well, for the scheme was thoroughly worked out and Government co-operation obtained before the public heard of the matter. The idea is that a special company shall be formed to carry out the scheme. This company is to establish a large power station near the State collieries

in the Mittelbexbach district with the object of purchasing fuel at an almost nominal cost. There is produced at these collieries a coal of inferior quality which cannot with advantage be marketed, and the company has contracted with the State for an unlimited supply of this coal at a very low figure for thirty years. At the Mittelbexbach power station large steam turbines will be put down, working dynamos of some 10,000 horse-power. From this centre three long-distance transmission lines at 70,000 volts will be laid to sub-centres convenient for distribution. All these three main lines will be connected by cross circuits, so that one can help the other in case of breakdown. The current will first be transformed to from 10,000 to 20,000 volts, and later to from 120 to 200 volts for the use of the smaller consumers, the higher voltage being used for consumers in bulk. Contracts of two kinds will be concluded for the delivery of current, either direct to retail consumers, or to the periphery of a town or rural district respectively, the local authority being left to distribute it on its own terms. The companies interested are to be allowed to take up part of the shares of the operating company.

When the details of the project became

known, the parties in the various communal bodies favourable to public enterprise raised a great outcry against the Government which they accused of sacrificing public to private interests, and they demanded that the scheme—the utility of which was frankly recognised—should be carried out by the various local government authorities interested. It does not seem to have occurred to these critics that there could be any unfairness in purloining the promoting company's ideas in the way suggested. The Government did not justify its attitude on this reasonable ground, however, but pleaded that neither the requisite technical resource nor the needed capital was at its disposal. Nevertheless, it appears to have pressed the electrical company to conciliate opposition as far as possible, and the following concessions have been made to the objectors:—

- (1) The promoting company to give the associated communes the option of taking up one half of the shares in the company to be formed, such shares to be equitably allotted among the District Governments, the towns and the rural communes of the area to be served;
- (2) the same company to guarantee to the working company for three years a dividend on the ordinary shares, while

communes unwilling to incur risk will be offered a preferential dividend of $4\frac{1}{2}$ per cent., with, in addition, a share of surplus profits; (3) a State Commission to have a seat and vote on the board of directors of the projected company; (4) communes which buy current in bulk for distribution within their own areas to have complete liberty to lay down their own plant from the transformers forward, with no obligation to purchase material from the promoting company; (5) the new company to undertake to carry out the entire project without interfering with existing works in communal possession, leaving these free to continue as at present, while offering them such additional current as they may need on favourable terms; (6) the promoting company to lay down all necessary conduits, transformers, cables, wires, and other apparatus for the working company at cost price *plus* a fair profit to be agreed upon; and (7) the coal contract with the Government to be cancelled should the works not be completed in 1913.

Exactly the converse policy was adopted by the State in Prussia when, some time ago, a few of the rural district councils of the Cassel government district combined for the purpose of establishing on a co-operative basis a large central power station intended

to serve the whole of that district. After the negotiations had advanced a good way a representative of the Government appeared at one of the meetings and announced that as the State had decided to carry out a similar project in conjunction with extensive amelioration works there was no chance of the communal scheme being approved, and it was abandoned. The Government's project comprises the establishment of a large 'over-land' central station to serve the northern part of the province of Hesse and the southern part of the province of Hanover. Water power will be obtained from three sources, by damming up the Diemel and Edder valleys, and the construction of a weir on the Weser below Münden. The primary purposes of the scheme are the improvement of irrigation in the interest of agriculture, and the regulation of the streams in the interest of river navigation; but the electrical current which will be generated by harnessing the overflow at the points named will be put at the disposal of industry and agriculture, beside serving the public and private needs of the places on the route.

These are two out of many cases in which local government authorities are bestirring themselves in view of the feverish activity now being shown by the great electrical

companies. As a further example, the Provincial Diet of Upper Hesse has just sanctioned the erection of a large electrical station to cost £155,000, of which £125,000 is to be subscribed by the province and the rest by a number of urban and rural district authorities. A central station is being constructed by a number of rural district councils in the Lower Rhine district at a cost of £525,000. The district to be served has half a million inhabitants. The station will be located near the Friedrich Heinrich Colliery, and there will ultimately be eight main cables, with a total length of 380 miles.

The same movement is in progress in Saxony. The Leipzig Aussenbahn-Actiengesellschaft is building a large power station near the Kalkwitz lignite colliery to generate a current at 10,000 volts, and an association of rural communes in the Leipzig district has undertaken to lay cables for this current, and to distribute it according to the needs of the communities to be served, the contract being for thirty years. The entire cost of the project is estimated at £150,000 and most of the capital will be found by the associated communes. The municipal electricity works of Zittau and of Annaberg, also in Saxony, are being converted into 'overland' central

stations, with a view to supplying current to the surrounding rural communes. Again, in Würtemberg, over twenty small towns and villages in the Geislingen district have united to obtain power and light from a central station established and worked as a co-operative undertaking. In the same State large electricity works are being established in the Ulm district at a cost of some £60,000.

A far more ambitious project is that of the Bavarian Government for the supply of electric light and power to all parts of the country by the use of water obtained from the streams and lakes. The scheme includes the establishment of central 'overland' stations on a large scale, and existing power stations will be invited to connect themselves. It is proposed to supply Lower Bavaria and portions of the Upper Palatinate by power derived from the Isar; for Upper Bavaria and portions of Swabia power will be obtained from the Walchensee; for Central and Lower Franconia the waters of the Lech will be used; and for Central Swabia those of the Iller; while for the Rhenish Palatinate, as has been stated, power will be obtained from the State collieries at Mittelbexbach, this portion of the scheme being already in the hands of a well-known electrical company.

The Government does not intend to undertake this extensive scheme itself, but will merely draft the essential features and direct the carrying out of the various works involved, with the object of securing complete co-ordination and a proper regard for public interests. Several electrical companies will share in the enterprise, a definite sphere of influence being allotted to each, though it is stipulated that the local government authorities (provincial, district, and communal) shall have a right to subscribe a fair proportion (probably one-half) of the share capital, and shall be represented on the directorates of the operating companies. By the carrying out of this scheme it is hoped that a strong impetus will be given to the industry of Bavaria. It is characteristic of the national spirit in which the undertaking has been conceived that the Government has laid down the principle that neither the parent companies nor the operating companies to be formed shall have a monopoly in the supply of electrical plant and installations needed by the public authorities which may buy current from the 'overland' stations. These authorities are to be able to buy where they will, the idea being to distribute the valuable orders equally amongst all Bavarian firms engaged in the electrical industry.

Not only will power be supplied for industrial, agricultural, and domestic purposes, but several lines of State railway will be at once electrified, including the main line Salzburg-Reichenhall, with the branch line to Berchtesgarden, and a new line from Garmisch-Partenkirchen to Scharnitz.

It is significant that the Bavarian Government is paving the way for a State monopoly in the supply of electrical current. In a report upon the foregoing projects it states :—

‘It may be premature as yet to pronounce definitely upon the important question whether the supply of electricity should not be nationalised in the same way as the railway, postal, telegraph, and telephone services, or coal and salt mining. The fact cannot be overlooked that the development of water power and the supply of electricity relate to spheres of production the influence of which—as in the case of means of transport—is of great importance for the development of our entire national economy. To hand over these spheres of production entirely to private enterprise would be contrary to the strong social feeling of the time. This does not prevent recognition of the fact that in this new domain private enterprise has achieved great things, and has bequeathed to the community

a legacy which is the fruit of long years of experience and ceaseless endeavour.

'If, however, the nationalisation of the supply of electricity must be regarded as premature, the Government should not omit to adopt preparatory measures in that direction. For not only has the nationalisation of the railways taught us what difficulties and disputes had to be encountered in the absence of agreements as to the price to be paid, but the experiences incidental to the purchase of existing electrical works—as, for example, in Switzerland—point the same moral. Hence the Ministry for the Interior regards it as expedient that for the future both in the leasing of water power and in the establishment of "overland" power works agreements for later purchase shall be made in advance, independently of whether the works should be acquired by the State, or a Circle, District, or Commune. Negotiations to this end have already been opened with existing large works.'

In token that the Government is serious in its intention to exercise close supervision over the development of electrical power supply in the kingdom, it has created a special State department to deal with the question, viz., the 'State Office for the development of Water Power and the Supply of Electricity.'

DEVELOPMENTS IN GAS ENGINEERING

The most important developments in gas engineering at the present time in Germany consists of the utilisation of coke-oven gas, as produced at the collieries of Westphalia and other coal basins, and its transmission by means of large conduits to the towns and villages of wide adjacent areas. The idea of central gasworks in itself is not new.

In 1903 an experiment of the kind was made on a small scale at Lübeck, which town contracted to supply gas to the seaport of Travemünde, some fifteen miles away, and there are now at least forty gasworks in Germany which act as supply centres for surrounding districts, for the most part very limited in area. What is new is the commercial use which is being made on a large scale of a waste product of the cokeworks and its distribution direct from the pit mouth.

Technical improvements in the coking of coal have chiefly made this departure possible. In the coke-oven batteries, as in the retorts of gasworks, the coal is heated to a high temperature in closed air-tight chambers. Hitherto nearly the whole of the gas given off by the coal in this process was needed for heating the chambers. Owing to improved

arrangements, however, only a portion of the gas is now required for this purpose, and the rest can be used in other ways. The amount of gas so available in Westphalia alone is enormous. A well-known Westphalian colliery manager, Herr Förster, of Mülheim, has estimated that 212,000,000 cubic feet of coal gas of the quality usually supplied by gasworks to their customers are daily given off and wasted by the coke-ovens of the Ruhr basin. This represents a yearly wastage of over 70,000,000,000 cubic feet, with a value—based on the low figure of 2 pfennige per cubic metre, equal to about 7d. per 1000 feet—of some £2,000,000. Regarded as an illuminant the gas now actually wasted by the Westphalian collieries far exceeds the entire consumption, for both industrial and domestic purposes, of the entire province.

As yet only a beginning has been made with the utilisation of this enormous store of potential light and power. Of the ninety-two coke-works in operation in the Dortmund mining district in 1905 only four produced gas for lighting purposes, the output being 63,500,000 cubic feet; in 1907 the number of such works was five (out of ninety-four), and the output 99,000,000 cubic feet; and last year the number was eight (out of ninety-

six), and their production 876,000,000 cubic feet. The fact that as yet only one in twelve of the coke-works in the Dortmund district disposes of its surplus gas as an illuminant indicates the vast resources which are still untapped. Obviously only a small portion of this gas could be used with advantage for lighting, but its conversion into electrical energy opens out boundless perspectives, and to these German enterprise is by no means indifferent.

Meantime, the use of coke-oven gas for illuminating purposes is making rapid headway. The idea of transporting this gas long distances was suggested by the electrical 'overland' central stations, and here, again, two Westphalian colliery proprietors, Herren Thyssen and Stinnes, have been specially enterprising. The number of towns in the Ruhr coalfield which obtain coke gas from the colliery companies, either directly or through the medium of companies formed to work this branch of colliery enterprise, is already considerable. In some cases the entire supply is so obtained, while in others the municipal works buy the gas only in order to supplement the output of their own works, so avoiding the necessity of extensions and renewals, with the attendant heavy expenditure.

The first transactions of this kind on a

large scale were those between the collieries controlled by Herr Stinnes and the towns of Essen and Mülheim, which began by buying coke-oven gas direct in order to mix it with that produced in their own works, to which it proved quite equal in quality. So successful was the experiment that these two towns have since decided to close their gasworks and depend entirely on colliery gas.

The contract of the municipality of Essen is with the Victoria Matthias Colliery Company, acting in the name of other colliery companies, and is to run at least ten years. Colliery gas will be supplied in bulk in any quantity needed at the price of $2\frac{1}{2}$ pfennige per cubic metre, equal to $8\frac{1}{4}$ d. per 1000 cubic feet, and in consideration of the town's works being discontinued, the colliery company undertakes to take over, at the existing salaries and wages, all officials and workpeople not required in future by the Essen Gas Department. At the end of the ten years the town will have the right to continue the contract for an equal term.

Similarly the adjacent town of Bochum has agreed to discontinue its gasworks and receive its supply from Krupp's Hannibal and Hanover Collieries, and the same thing has been done by Gelsenkirchen. Many other towns have either closed down their

works or are now negotiating with collieries to that end. The municipality of Barmen has concluded a contract with the Wasserwerk Thyssen and Company, of Mülheim, covered by the guarantee of the Deutscher Kaiser Colliery Company at Hamborn, under which it will discontinue its works but will receive a *minimum* profit of £5000 a year on the gas it buys from the company and sells to the inhabitants. The contract is for twenty-five years, and the price ranges from 1s. 3½d. to 1s. per 1000 feet. The gas has to be conveyed over thirty miles, but communes on the way are also supplied.

With the object of developing this important branch of gas engineering still further a scheme is being promoted for the establishment of a large gas generating station, from which, if needful, the whole of the industrial district of Westphalia could be supplied. A number of towns have given a provisional promise to discontinue their gasworks, and the execution of the scheme will be taken in hand directly a sufficiently large network of towns can be obtained for it. It is proposed to set up coke works with huge receiving chambers both at the eastern and western ends of the district, and from these to convey the gas by a system of main pipes to central distributing works. It is expected that gas can

be supplied to the communes at the price of 1s. per 1000 cubic feet, leaving them an ample margin for profit on sale to local consumers.

The same movement is in progress in the Saar coalfield, where the Stumm Collieries supply the town of Gross-Saarbrücken with coke gas, and in the Waldenburg district of the Silesian coal basin. The Upper Silesian Central Gasworks, established by the Bismarck Smelting Works Company, has already thirty-eight miles of gas pipes, and competes successfully with the large electrical works in that district.

For the present the large municipalities equipped with thoroughly modern plant cannot be said to have been seriously menaced by this movement, even when situated on the outskirts of a coalfield, like Cologne and Düsseldorf. Not only has the introduction of vertical retorts and other recent improvements rendered great economy possible in the cost of production, but these towns are effectually protected by the trade monopoly which they enjoy within their administrative areas. On the other hand, where a town lies far away from the coal measures, like Berlin—which supplies gas to various small communes many miles from its boundaries north and east—it may be a considerable

time before the long-distance transport of colliery gas will benefit the great mass of consumers. Nevertheless, the question of bringing this gas within reach of all the large centres of population is chiefly one of initial expense. The gas exists in virtually unlimited amount, and can be remuneratively marketed at the mere cost of collection and conveyance.

It is not difficult to realise the enormous possibilities of which these 'overland systems' of electricity and gas supply are capable. From the technical standpoint there is no reason why the two great coal and iron districts of Germany, Westphalia and Silesia, should not be able to supply at least a large part of the country with all the light and power needed for industrial, agricultural, domestic, and public purposes. In regard to electricity in particular, great advantages and economies would be offered, both to industrial and domestic consumers. The main economies would be obtained by utilising furnace gases, coke-oven gas, and unmarketable coal where they exist practically as waste products, and by the substitution of large central plants, producing at the *minimum* cost, for innumerable small ones producing inefficiently and expensively. An incidental consequence would undoubtedly be a great deurbanisation of

industry. When main cables can be tapped for power at any given point industry will to a large extent become independent of local conditions, and the creation of rural industries will receive a great impetus. As an instance of intelligent anticipation it is worthy of mention that when some time ago the Prussian Government was providing an electrical plant to work the weirs and locks of a canal which it was building in the northern part of the kingdom, the works were devised on such a plan that in addition to obtaining all the power needed the Government was able to supply a wide adjacent district with power and light for industrial and domestic purposes.

The advantages as regards gas are not less obvious. Instead of every town and village importing coal from distant collieries in order to produce its own illuminant in comparatively small quantities uneconomically on the spot, the supply would be obtained from central receiving and distributing works, conveniently situated, linked up with the producing collieries. All the advantages of production on a large scale would in this way be secured, to the great gain of the consumers, while the familiar experience of prices varying by 50 and 100 per. cent. in contiguous areas of supply would cease to

exist. The immense saving in the transport of coal alone would soon pay for the cost of laying down the necessary plant and mains, but the economy effected both in capital and labour by restricting the function of local authorities to the work of distribution would also be enormous.

The idea of thus revolutionising the electrical and gas engineering industries is a big one, but big minds are working at it, and it would be unsafe to regard its eventual realisation as chimerical or even doubtful.

CHAPTER VIII

THE ORGANISATION OF LABOUR

TRADE unionism, which in England has a history of nearly a century, goes back in Germany little more than forty years. Up to 1869 the German workman enjoyed neither the right to work where he wished nor the right to follow the calling of his choice, and, in the absence of these rights, effective labour combination was impossible. Even when the hindrances to combination were removed, it was some time before the trade union movement took hold of the working classes, and even now it has been a serious fighting force for little more than a decade.

There are three historical groups of labour organisations, the 'Free' or Social Democratic, the Christian or mainly Roman Catholic, and the Hirsch-Duncker unions, the last corresponding most nearly to the English trade unions of the old type. To these groups of organisations has been added quite recently a fourth, consisting of Pacifist or 'Free Labour' societies formed as a rule for individual industrial undertakings and liberally subsidised by the employers. German fondness for catchwords identifies these four groups of trade unions with distinctive colours: the Social Democratic organisations are 'Red' (and their members 'the Reds') the Christian organisations are 'Black,' the Hirsch-Duncker 'Blue,' and the Pacifist 'Yellow.'

Chronologically the Socialist and Hirsch-Duncker organisations were twin-born, but twins more dissimilar in constitution were never known. The first Socialist organisations were formed in the early part of 1866, being an offshoot of Ferdinand Lassalle's politico-economic 'Productive Association,' which was to have organised the wage-earners in a large co-operative society for production and distribution. In the autumn of the same year a Liberal deputy in the North German Diet, Dr Max Hirsch, visited England

for the purpose of studying the trade union movement here, and, on returning home, he at once began, in conjunction with Franz Duncker, another Liberal deputy, to organise the non-Socialist workers on English lines. From the first, the Hirsch-Duncker unions have been recruited in the main from a class of working men which, in so far as it has marked political sympathies at all, has never cut itself quite adrift from the progressive burgher parties, and has shown no disposition to identify itself with Socialism. The Hirsch-Duncker unions are defensive rather than offensive organisations, yet while they do not hesitate on occasion to make common cause with the militant Socialist unions, the relations between the two camps are in reality more strained in peace than in war times. So long as the Socialist organisations were kept in check owing to the restrictive law passed in 1878, the Hirsch-Duncker group of unions occupied a relatively high place in numbers and influence. For a long time, however, they have ceased to keep pace with the growth of the working class and for several years they have even shown an absolute decline. Five years ago they still contained 6 per cent. of all organised work-people; but to-day their share is barely

8 per cent. of the whole, and every year the proportion diminishes.

The Christian or Roman Catholic unions were a development of pacific organisations originally formed as part of the social machinery of a church which always has kept in close touch with its humbler members. Only gradually, therefore, have these organisations fallen into line with trade unionism as an economic and political force. Even now the leaders do their best to keep in check militant tendencies, but with indifferent success. It is a well-known fact that in all the large towns many Roman Catholic workmen, while remaining loyal members of their church and hostile to Socialism, are paying members of the Socialist trade unions. Three-quarters of the population of the Bavarian capital are Roman Catholic, yet the Christian trade unions here have a membership of 6000, while the Socialist organisations have a membership of 68,000. It might appear that the future of the Christian organisations depends upon the extent to which their leaders are prepared to relax the ecclesiastical guiding strings and adopt a more pronounced labour policy. They are failing to keep pace with the conquering Socialist societies, though it is fair to remember that, from their nature,

they cannot pretend to be either pioneer or proselytising organisations.

The Christian organisations are threatened still more by the opposition of a large part of the Roman Catholic episcopacy and clergy to their inter-confessional basis, and strenuous attempts are being made to divert Roman Catholic workmen into organisations formed for them exclusively and managed by the priesthood. The question of Roman Catholic trade organisations was referred to the Pope during the present year, and as a result a formal encyclical was addressed to the German episcopate. In this letter the Pope—acting no doubt upon the advice of the bishops themselves—allowed Roman Catholic workmen to continue membership of the inter-confessional 'Christian' associations, but only on condition that they simultaneously join purely Roman Catholic societies directed by the clergy and subject in every detail to the discipline of the Church. It is obvious that a *modus vivendi* of this kind can only be temporary, and that it makes the position of the Christian organisations still more ambiguous and their future still more uncertain.

The fourth group of trade unionists deserves to be specially mentioned, less because of their present numbers than of their origin

and special policy. The Pacifist unions are of several types, but they are alike in representing what would be known in this country as the Free Labour movement and in their opposition to strikes as a remedy for labour disputes. Their funds are largely contributed by the firms—for the most part large and wealthy firms—in whose service their members are employed, and under the circumstances independence would hardly be expected of them. While, however, many of the Pacifists do not represent the labour cause in its most virile aspects, it is none the less true that a section of their number are as honest and fearless in their opposition to the methods of force as the militant Socialists are in advocating them. The numerical strength of these unions is not yet great, but they would appear to have passed through the stage of ridicule into that of obloquy, which is proof that they are regarded by the other organisations as of some account, and they show signs of unmistakable vitality. The Socialists represent the Pacifist unions as an employers' wedge struck into the labour movement in the hope of cleaving it. They are rather a leaven, which may or may not spread, a token that there is a section of the working

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classes, by no means negligible in influence, which is convinced that for economic disputes force is not a rational or a lasting remedy.

The most important unions in the remaining independent group are those of the railway men, containing 600,000 members, and the Polish organisations of Westphalia, numbering over 70,000.

The numerical strength of the various groups of labour organisations at the end of the year 1911 was as follows:—

Free (Social Democratic) Trade Unions	2,400,018
Hirsch-Duncker	107,743
Christian (Roman Catholic)	850,574
Independent	763,935
Pacifist	162,262
Local Organisations	7,133
Total	3,791,665

These figures disregard the many confessional organisations of working people formed for purposes without direct connection with the labour movement. The strongest group of the kind is that of the Roman Catholic associations with over 500,000 members of both sexes, while the Protestant associations have 166,000 members.

Eleven years ago (1901) the aggregate membership of all the German trade unions was a million; in 1911 it was three and three-quarter millions, and of the increase of two

and three-quarter millions no less than two-thirds were contributed by the Socialist unions. During the corresponding period the membership of the trade unions of the United Kingdom increased from 1,962,000 to 3,010,000.

The financial resources of the various groups of trade unions are compared in the following table, which likewise relates to 1911 :—

Trade Unions.	Income.	Expenditure.	Accumulated Funds at the end of 1911.
	£	£	£
Free (Social Dem.)	3,604,848	3,001,254	3,105,291
Hirsch-Duncker	181,161	115,214	218,668
Christian (R. C.)	812,182	264,989	854,147
Independent	125,722	103,845	169,880
Pacifist	73,634	59,128	59,276
L'o'l Org'nisat'ns	—	—	—
	£4,247,047	£3,543,930	£3,901,712

The Socialist organisations with the largest membership are those of the metal, building, wood, transport, mining, textile, and clothing trades; the strongest Christian organisations are those of the miners, textile operatives, masons, and metal workers; the strongest of the Hirsch-Duncker unions are those of the machine and metal workers, while the Pacifist unions are largely recruited from the engineering and metal trades.

Little success has been achieved by any group of unions in the organisation of

agricultural labour, but for several years the Socialists have been putting forth strong efforts in that direction. Spurred by their example both the Liberal and Clerical parties are also endeavouring to convince the agricultural labourer that Codlin and not Short is his true friend. It is questionable, however, whether either of the burgher parties thinks as much of advancing Hodge's economic interests as of securing his political vote.

Since trade unionism has been a power in German industrial life the relationships between capital and labour have no longer been marked by the old smoothness. Twenty years ago the recorded labour disputes in Germany were to be counted by tens—the number in 1892 was 73, affecting 3000 work-people—and even ten years ago they only just exceeded an average of 1000 a year; in more recent years the number has reached 3600, and the number of workers affected over 500,000.

The number of strikes in 1911—a year of good trade—was 2566, and 93 per cent. were of an aggressive character. Most of the strikes occur in the building, wood, metal, and machine industries. The purposes to which the Socialist unions devote their revenue illustrate the militant character of these organisations. In 1911 over 80 per cent. of

all their expenditure went in support of strikes and disputes, while the corresponding proportions in the case of the Hirsch-Duncker and Christian organisations were $14\frac{1}{2}$ and $22\frac{1}{2}$ per cent. respectively. It is only fair to add that the Socialist unions liberally supported their members in other ways; thus $10\frac{1}{2}$ per cent. of their expenditure was out-of-work pay, corresponding with $9\frac{1}{2}$ and $3\frac{1}{2}$ per cent. in the case of the Hirsch-Duncker and Christian organisations. On the other hand, the Socialist unions were behind some others in sickness and death benefits, the proportion of their expenditure under this head being $19\frac{1}{2}$ per cent. against 38 per cent. in the case of the Hirsch-Duncker, and $17\frac{1}{2}$ per cent. in the case of the Christian organisations.

Although the German trade unions were originally modelled on English lines they have in some respects departed from their prototypes. 'The English trade unions,' wrote the *Vorwärts* not long ago, 'served once as the models for labour organisations in all other lands. The Germans themselves were accustomed in the beginning of the 'nineties of last century to look to England as the pattern of trade unionist organisation. We have, indeed, learned from England the principle of high contributions and of good

benefit arrangements, but only the principles for in their application the German unions have gone their own way.' The German trade union movement specially differs from the English in the fact that it has consistently discouraged independent local organisation and has united the workers in a few powerful federations, thus concentrating instead of dissipating strength and effort. Hence the 2,500,000 Socialist trade unionists of Germany are organised in some fifty central federations, which in turn are united in one central Trades Council, while the same number of trade unionists in the United Kingdom are distributed amongst over 1500 organisations and scarcely 1,000,000 of them are affiliated to the central federation. A German trade unionist leader wrote recently:—'The trade unionist co-operation of the English workers is small as compared with the strong bond of union which keeps the German unionists together,' and still more recently an English trade unionist leader confirmed this statement as the result of a special study of German trade union methods, when he wrote, 'A comparison between the German trade unions and our own would decidedly be to our disadvantage. At present we are bound fast by a system which may have been

effective before capitalist developments compelled employers to combine against us, but which is to-day demonstrably obsolete.'

Not only so, but the English trade union movement compares unfavourably with the German in the fact that it has largely ignored, or at least has failed to bring in, the unskilled workers, and has developed an organised *élite* of labour which would be slow to make blood brotherhood with the miscellaneous mass of the labour party. The German unions, on the other hand, have paid special attention to unskilled labour, as constituting the weakest link in the chain of labour organisation, and it is partly owing to this fact that whatever the present difference between the ruling rates of wages in the two countries—and it is no longer as great as it was eight or even five years ago—the position of the unskilled workman relatively to that of the skilled workman is more favourable in Germany than in this country.

The endeavours which are made, at great expenditure both of money and personal service, to fortify the labour movement by the aid of an educated, moral, and public-spirited working class are worthy of all praise, and go far to explain the rapid advance of this class in social and material status. Disre-

garding the enlightened efforts made by labour representatives in Parliament and on the local authorities to raise the standard of education in every direction, the labour organisations are unwearied in their insistence upon the truth that for labour more than for any other interest knowledge alone gives permanent strength.

Hence we see the central labour organisations of the larger towns maintaining working men's colleges, providing by evening class or lecture courses of instruction upon economic, historical, philosophical, and other subjects for men who have a long day's work behind them, establishing libraries, reading-rooms, reading circles, and the like, all with the one purpose of making labour more efficient, more self-reliant, more dignified, and more able to hold its own in the social controversies and contentions of the day.

The trade unions of Berlin have more than forty libraries in various parts of the city, with a total of some 50,000 volumes; the average is small, because many of the unions are weak in membership, but the union of the metal workers has a total of over 10,000 volumes. These unions together spend £1000 a year in adding to and improving their collections of books. As bearing upon this question a passage in the report for 1911 of

a factory inspector for the Berlin district is very instructive. Therein testimony is paid to the great demand for books shown by the working classes of Berlin, and the inspector adds :—'It may be said without doubt that one-half of those who use the public libraries are industrial workers. Many working men's wives likewise take great interest in reading, often in the avowed hope of keeping their husbands from the public-houses.'

The large German trade union federations have of late developed a passion for investigations into the wages, hours, and general conditions of labour prevailing in the important trades and industries. Many of these investigations have yielded results of the utmost interest, and the care and conscientiousness with which they have been carried out are proved by the fact that they are systematically recorded in detail by the Official Journal of the German Labour Department. A work of still more ambitious character was recently carried out by the Metal Workers' Federation in the form of a critical history and description of the heavy iron industry of Germany, with special reference to the workers employed therein and questions relating to them, a work of many hundred pages, worthy of skilled investigators of the highest type.

No pains are spared by the leaders of the Socialist trade union movement to strengthen the attachment of members and to make it worth while to organise. Here they are supported by a powerful and singularly able Press. More than a hundred daily newspapers and a large number of weekly organs, the latter for the most part of a trade character, are at the direct service of the labour party and its cause. There is hardly a town of consequence without a daily labour newspaper and many towns have two. It is claimed that the newspapers published by the trade unions and federations have together an aggregate circulation of 2,250,000 copies a day.

There is a largeness of conception—entirely free from pretentiousness—about the German trade union organisations which shows that the modern leader of labour not less than the leader of capital is made on large lines. Take the central offices of the Trades Council as they may be seen in any German industrial town. Comparisons may be odious, but they may also be instructive. A social investigator wishing to come into touch with representative trade union thought in a English industrial town of even the large size would probably need to perform a tedious and trying voyage of exploration; he would

have to scour the town from north to south, and east to west, with excursions into the country by the way, and visits to sundry cottage sitting-rooms and kitchens as a minor detail, before he had succeeded in tracking down the desired officials. The German trade unions, true to their underlying principle of federation and centralisation, have a common habitation, and often it is fit to rank with the finest public buildings in the town. The central offices of the Trades Federations of many German towns may have cost any sum from £10,000 to £50,000. Under one roof are provided well-furnished and airy suites of rooms for all of the affiliated unions, large meeting halls, reading-room and library, refreshment and smoke rooms, bedrooms for travelling workmen, gymnasia for young people, and possibly in the basement a number of bathrooms. To visit such a trade union centre is to come into contact at once with the directing minds of the labour party; every organisation that counts is located there, and at the stated business hours, which as a rule begin early and never seem to end at all, the trade union official is sure to be at his post. The latest move of the Socialist-Labour party is the establishment of clubrooms for boys and young men—an

answer to the earnest efforts which are being made by the Prussian Government, under the name 'juvenile care,' to counteract Socialist influence amongst young people of both sexes.

At the trade union headquarters will almost invariably be found an institution of the utmost value to the working classes. It is the public information and advice agency, usually known as the 'labour secretariate.' The law does not excuse ignorance of its own devices, and, in view of the multiplicity of statutes affecting the lives and actions of the workers in so many ways, a host of these free advice agencies have been established for the purpose of making it as easy as possible for the citizen both to do his duty and to secure his rights. The earliest agencies of the kind were carried on by religious organisations, and were of a simple, informal, and altogether inexpert character. The Socialist trade unions early realised the importance of giving advice to working people, not merely for the purpose of helping them out of difficulties and instructing them how to pursue their rights under the Insurance Laws, but of attracting recruits to their ranks. They began by holding at the union offices periodical consultations, as a rule in the evening, to which inquirers were invited to

resort irrespective of political or other distinctions. Out of these consultations developed settled inquiry offices open all day and directed by able, trained officials. In the larger towns the trade unions of the Christian and Hirsch-Duncker types have followed the Socialist example, while, apprehensive of the growing influence of Socialism over the working classes, the municipal authorities and employers' associations have established agencies of the same kind in many towns.

There are now altogether nearly a thousand agencies of all kinds for instructing the simple man upon the duties of citizenship. Of these 440 were, in 1910, carried on by trade unions (316 by the Social Democratic, 50 by the Hirsch-Duncker, 54 by the Christian, 14 by the Polish, and 6 by other labour organisations), 234 by public and philanthropic bodies, 195 by employers', religious, and political organisations, while the remainder were of a miscellaneous order. These various agencies gave verbal advice or information in 1,695,000 separate cases in the course of the year, and in addition sent out or prepared 440,000 documentary opinions. The vast majority of the questions upon which assistance is desired relate to the Insurance Laws and the duties and still more the claims

of work-people thereunder, but other fruitful sources of difficulty are the factory, tenancy, contract, apprenticeship, marriage, and taxation laws, and questions of local government.

It is difficult to explain satisfactorily this remarkable system of public organisations created for the purpose of removing ignorance and spreading the light upon civil obligations and rights, for in no other country can its parallel be found.

Are the German working classes, if left to their unaided resources, more ignorant of the law than the workers of other countries? Are they more wishful to comply with the law's requirements and more eager to assert their rights? Do they wish more than others to avoid civic frictions and to live in peace with their neighbours? Or can it be believed that these institutions are artificial products of an exaggerated patriarchalism that allows the citizen to do nothing that can by any means be done for him, institutions forced upon the workers from without and used by them only because they happen to lie in their way? Or, finally, may they be regarded as a reflection of the German spirit of thoroughness and method, as part of the national cult of efficiency? Explain it as we will, this array of intelligence centres, radiating light in

more than a million and a half obscure places in the course of a single year, is one of the most striking facts in the social life of Germany.

It has long been one of the complaints of German employers that much of the trouble which trade unionism is causing them is due to the influence of the English trade unions. Hence every great dispute which occurs in this country is followed by them with close interest. When the strikes of the transport and railwaymen occurred in 1911, some of the large German employers' federations sent expert officials to this country to study matters on the spot. The moral which German employers drew from those disputes is stated as follows in the last annual report of the Central Office of the German Employers' Federations:—'The radical tendencies of the English trade unions are not new to us; we have repeatedly had to point out the influence which Social Democracy is exerting upon the old moderate trade unionism, which has already withdrawn into the background.'

Nevertheless, there are indications that the labour party, while as resolutely antagonistic to capital as ever, and as determined to fight it to the bitter end, is overhauling its armoury. A short time ago the leading labour newspaper, the *Vorwärts*, published

what amounted to a repudiation of collective strikes of the kind to which British industry has of late years been accustomed. Admitting that conditions might conceivably be favourable to such strikes it argued that they had proved unsuited to Germany.

‘Such mass strikes cannot,’ it said, ‘be regarded as belonging to the fixed plans of trade union strategy and to its normal principles. Those conditions are extremely rare. They existed in England in the case of the transport workers’ strike last year and the miners’ strike this year (1912), but they were absent in the case of the London dock labourers’ strike. They are also entirely absent in Germany. For here it is not democracy which rules, but the feudalism of the Junkers and the industrial plutocrats, an obscurantist and reactionary police bureaucracy, and the machine gun, while the employers have at command great and powerful organisations, which have a direct interest in extending the area of disputes. The wider the fighting front in such a case the less dangerous the competition between employers in the trade market, and the more rapid the exhaustion of the workers’ fighting funds. Hence, also, the greater prospect of the employers seeing the machine gun brought

into action and the dispute quenched in the workers' blood. Such a situation as this is not favourable to wholesale struggles like those which took place in England last year.'

The significance of the *Vorwärts* declaration is all the greater owing to the fact that it followed the failure of the miners' organisations to bring about a general strike in Westphalia at the time the miners were out in this country.

CHAPTER IX

THE ORGANISATION OF CAPITAL

WHILE, however, labour has been perfecting its organisation capital has been shaken out of its old lethargy and has answered defiance with defence and defence with defiance. Nothing in the history of German industrial organisation is more remarkable than the way in which during the last ten years the employers have rallied together for the purpose of resisting the steadily increasing pressure of organised labour. What is specially noteworthy about this counter-movement is the fact that the weapons adopted have with hardly a single exception been borrowed—sometimes with improvements—

from the enemy's armoury. Thus the modern employers' federation is the counterpart of the great trade union agglomerations; the Central Office (Hauptstelle) of these federations corresponds to the central Trades Council of the labour organisations; the collective lockout was the employers' answer to the collective strike, the sympathetic lockout to the sympathetic strike, the strike insurance fund to the trade union strike pay, the employers' labour registry to the trade union registry, the employers' information and advice agency to the workmen's secretariate, the employers' black list to the trade union boycott, and so on.

Ten years ago there were no large federations of employers' associations, and the independent associations themselves were comparatively weak and negligible. Now all the great industries are not merely organised locally, but have powerful central unions, which are managed with singular ability, and may be said to regulate the policy of capital in all its external dealings with organised labour. This lesson of close organisation and solidarity the employers have learned from the workers, and, as so often happens, the pupil has excelled the master on his own ground, for capital has not been content to meet attacks, it has carried the war into the

enemy's camp. If the collective strike has of late years been very common, the collective lockout has been the employers' answer, and that the answer has proved effective may be judged from the fact that the trade unions are now considering whether the collective strike is not after all a weapon of doubtful value.

There were known to be in existence at the beginning of the present year 102 federations of employers, covering the whole country, 461 federations covering either whole states or large districts, and 2521 more or less local federations, giving a total of 3085 federations of all kinds.

The industries mainly organised in national federations are the mining, metal, and machine, and to a less extent the textile trades; while the building trades and the wood and clothing industries are in the main organised locally. It is not without significance that some of the industries in which the employers have created the most powerful organisations are those in which the trade unions are specially strong. This applies in particular to the building, mining, printing, textile, metal, wood, clothing, and food and tobacco trades.

The largest of these federations represented the following trades and occupations :—

Industry.	Number of Federations.	Number of Members.	Number of Work-people.
Metal and machine	294	13,752	796,288
Textile	95	2,616	490,028
Mining	10	274	469,982
Building	1,280	49,177	500,924
Stones and earths	139	3,607	209,248
Food and tobacco	136	9,900	182,355
Clothing and cleaning	281	11,628	168,018
Trade and transport	148	4,675	101,097
Printing, etc.	130	5,417	77,006
Agriculture	50	14,154	99,010
Wood and carving	183	5,080	70,137

The strongest separate trade federations are those of the metal industry, the seat of which is in Berlin, with 3000 members employing 500,000 work-people; the textile industry, at Aix-la-Chapelle, with 1912 members, employing 317,000 work-people; the building trade, at Berlin, with 19,000 members employing 250,000 work-people; the civil engineering industry, at Berlin, with 913 members employing 120,000 work-people, and six federations for the colliery and iron smelting industries representing 470,000 work-people. Of a total of 3085 federations 2019 reported the number of their members, the aggregate being 132,485, and 1547 the number of the work-people employed, the aggregate being 4,378,275, the latter a total far in excess of the number organised in trade unions.

The largest general federation is the Association of German Employers' Federations,

representing over 50,000 employers with 1,600,000 work-people. After it comes the Central Office of German Employers' Federations, representing 6656 employers with 1,050,000 work-people. Other important national organisations are the Central Federation of German Industrialists (*Centralverband Deutscher Industrieller*), specially representing the interests of the colliery proprietors and ironmasters of the Rhineland and Westphalia, and the League of Industrialists (*Bund der Industrieller*), composed for the most part of firms of medium and small size engaged in the finished iron and steel trades.

The Central Office is specially typical of a federation of employers' associations conceived and worked in the grand style. Its programme includes the promotion of a friendly relationship between employers and work-people, but its principal objects are the protection of the common interests of employers against unjustifiable labour demands. The Central Office covers the entire Empire, and is organised independently of industry or trade. Its policy is directed by an executive and general secretary in conjunction with the general meeting of members.

The idea underlying the organisation is that all employers shall act as one in the

event of any important dispute in which matters of principle are involved. For this purpose the members mutually undertake not to employ workmen who are involved in a strike and, if called upon, to join in a general lock-out. Under certain circumstances it makes grants to members who suffer loss owing to strikes or lock-outs; it works a strike insurance scheme; and it organises employers' labour registries in opposition to those carried on under public or trade union auspices. Naturally it takes a leading part in the labour struggles which occur from time to time in the affiliated trades, and is insistent upon the duty of the law to afford protection to free labour. The Central Office at the present time represents forty federations of employers. It publishes a monthly journal devoted to the interests of employers in general and of the affiliated federations in particular.

The value attached by employers to the services done for them by their great federations was illustrated not long ago in a striking manner; when the secretary of the most powerful of these organisations resigned in 1910, after twenty years' work, he was handsomely pensioned and in addition the associated employers made him a parting gift of £50,000.

The most obvious effect of these organisa-

tions of employers is the substitution of active for passive resistance to the demands of labour. This is seen in the increase of lock-outs. Ten years ago lock-outs were rare, and never occurred on a large scale; during the three years 1899-1901 there were only 93 lock-outs as compared with 3700 strikes, and while 277,400 work-people struck work in the three years only 19,790 were locked out. In the three years 1909-11 there were 1462 lock-outs as compared with 6216 strikes, and while the strikers numbered 469,414 the work-people locked out numbered 375,407. Of the strikes only 19 per cent. were entirely successful, 46 per cent. were partially successful, and 35 per cent. were entirely unsuccessful; while of the lock-outs 31 per cent. were completely successful, 63 per cent. were partially so, and only 6 per cent. were quite unsuccessful. In 1911 alone the strikes numbered 2566 (1898 individual and 668 group strikes) and the lock-outs 1115; but, while the strikes affected 8276 undertakings, the lock-outs affected 10,834; and, while the number of work-people who struck work or became unemployed owing to strikes was 167,900, the number unemployed owing to lock-outs was 222,800. In other words, while each strike involved on an average

three undertakings and 70 work-people, each lock-out involved nine undertakings and 200 work-people. In 1911 there were fifty lock-outs for every one which occurred in 1899.

The spirit in which such combined action is taken may be illustrated by the injunction to employers contained in the report for 1911 of the Central Office of the Employers' Federations. They are there told:—'If a federation resorts to the final and extreme measure of a lock-out all employers must recognise the absolute necessity of carrying out the lock-out to the last man and to the last drop of their blood, for if a lock-out is introduced there should be no question of consequences, but only of winning or losing. This view requires, on the other hand, that a lock-out should be enforced only when concessions have gone to the utmost point, and that it should in no case be threatened so long as this condition is not fulfilled and there is no certainty of being able to carry out this measure thoroughly.'

While, however, the employers' federations expect their members to show the utmost loyalty to each other, and to beware of quarrels, but having entered one to see to it that their opponents beware of them, it would be wrong to suppose that these organisations are

systematically used as a means of combating all labour demands independently of their expediency or justice. The responsible men who direct these associations know that employers best justify themselves before the bar of public opinion and, in the end, best promote their own interests, when they give to labour as little justification for discontent as possible. Hence the members are encouraged to make the conditions of employment such as to deprive work-people of a sense of grievance and lessen the risks of agitation. In a circular addressed to its members a short time ago, the Central Office of the Employers' Federations candidly pointed out that some of the members worked excessively long hours and paid unduly low wages, and told such employers that, so long as these inequalities were unremedied, they must not expect support in the event of a dispute owing to either of these reasons. It added:—'It is a fundamental condition of an organisation of employers for the resistance of unjustifiable attacks by the work-people and their unions that the employer should, of his own free will, do his utmost to satisfy his work-people in so far as the prevailing conditions allow. Above all the employer must avoid everything that might place him

in a wrong position as against his work-people, otherwise trouble is inevitable.'

Another important development of employers' strategy directly due to the labour agitations of recent years is the establishment of employers' labour registries. There was a registry of the kind in Hamburg so long ago as 1890, but it was not until the formation in 1904 of the two powerful employers' federations, the Association of German Industrialists and the Central Office of the German Employers' Federations, that the movement was taken up systematically.

At the present time 250 employers' associations in various trades and parts of the country have their own labour registries, the majority of which serve for large industrial towns and their suburbs. The industries which have most largely adopted this method of obtaining labour are the colliery, metal and machine, building, and transport industries; but there are also many employers' registries in connection with the textile, clothing, and wood industries. In several localised industries the employers refuse on any condition to engage work-people except through their recognised registry. The miners of the Ruhr district, for example, are required without exception to engage themselves at the Essen

central registry for the colliery industry or one of its branches.

The contentions of the employers in establishing their own registries are perfectly straightforward and theoretically sound. The object of a labour registry from their standpoint, they say, is not to find work for unemployed workmen indiscriminately, but to find workmen for the precise work that waits to be done. No employer engages workmen simply in order to relieve a congested labour market; on the contrary, every man engaged is needed to fill a special vacancy and to discharge a special function; if the position and the function did not exist he would not be employed. The public labour registries, however, are concerned less about the needs of special trades and industries, or of industry at all in general, than the needs of the unemployed; their first interest is not the employer but the workman. Hence it is contended that they can never offer a complete or even satisfactory guarantee of efficient service. They may and do honestly endeavour to supply the best men for the positions offered, but they cannot look at the matter with the eye of the employer. The latter contends that in the pressure of modern industrial life he cannot be expected to take

men on trust with a view to testing what they can do; he must have the right men directly the need arises, so that vacancies may be filled with as little disturbance as possible to the rest of the industrial machinery. Hence the employers' registry is based on specialisation. The public registries undertake to register employers and work-people of any and every trade; the employers' registry almost invariably exists for one trade or industry only and is organised in accordance with its particular conditions and needs.

The importance of the employers' registries will be seen from the fact that in 1911 they filled 1,147,000 vacancies, a number equal to that filled by all the public general registries in Germany. There is no doubt that the establishment of the employers' registries has been prejudicial to the growth and the good work of many of the older public registries, which more and more serve the interests of the smaller trades, of casual labour, and domestic service. Nevertheless, there can be no fear that the public registries will be superseded, for, independently of the mediation of labour from day to day, they fulfil other functions which lie beyond the competence and the interest of the employers' agencies. For example, they are able to give

special attention to apprentices and young people entering employment for the first time—advising them upon the choice of vocation, instructing them as to the openings offered by the various local trades and industries, etc., and they are able to play an important part in the adjustment of labour demand and supply as between town and country.

But the desire to obtain efficient labour and to obtain it speedily is not the employer's only purpose in establishing his own registry and he does not pretend that it is. A second and an equally important object is to keep out the restless elements in the labour force and to fortify the position of capital in the contingency of disputes. As one of the speakers at a recent conference of employers' federations held at Wiesbaden said:—'Our labour registries are naturally in a certain sense militant organisations. We have openly acknowledged that and we say it without fear. Our employers' federations have been formed not for the purpose of retaining the workers, but as a weapon wherewith to resist their ever-increasing demands and the ever-increasing power of their organisations. And just as the federations have a defensive and a militant purpose, so it is obvious that the employers' labour registry must subserve

the same end. From this standpoint it is the purpose of the labour registry to offer the employers efficient help in the event of strikes and lock-outs.'

This supplementary purpose is achieved by exercising a more or less inquisitorial control over the workmen who offer themselves, and by making it difficult for disturbers of the peace to obtain employment.

An elaborate card system of records of antecedents forms part of the machinery of the employers' registry. Nominally these *dossiers* are intended to afford a ready indication of a man's special capacity, his steadiness and stability, and his general character. Often the record goes further and, without saying it in so many words, affords a clue to his political tendencies, the brand of his trade unionism, and his desirability from the standpoint of internal harmony. It is a common complaint of the trade unions in some towns that active trade unionists are marked men whose chances of re-employment, should they fall out of work, are small. Many a workman who has made himself unpleasantly prominent owing to a too eager and impudent advocacy of trade union principles loses his employment for no known reasons, and would be a wanderer for the rest of his

life were it not that some labour organisation finds use for his services, or that he is able to find an independent means of livelihood. If he keeps to his trade and finds employment in another town he will soon find himself discharged on some vague pretext or other, the true reason being that a letter has been received from the employers' association of his trade, marking him as dangerous, and urging that, in the interest of employers generally, he should be sent about his business.¹

It is said that not a few coal miners now settled in Scotland left Westphalia owing to the refusal of the colliery companies to take them back after disputes.

It may be noted that the legality of this 'black-listing' of undesired workmen, which is not denied, though its extent is probably exaggerated, has been tested more than once in the law courts. Not long ago the High

¹ The following extract from such a letter, dated January, 1911, and emanating from an employers' federation embracing many hundreds of firms, explains the crude method of boycotting often practised:—'You have just taken into employment three young men lately in the service of the firm of _____ in this town. The behaviour of these men while employed by _____ was altogether condemned by us, and we beg you, both in the interest of the federation and for your own pecuniary advantage, to discharge them at once or at the latest within a fortnight, and not to engage them again. If we hear from our confidential agent at _____ that this has not been done, we shall be compelled regretfully to advise our members not to buy from you, and to obtain their supplies from the firm of _____ instead.'

Court of Justice decided that the keeping of 'black lists' and the victimising of workmen by employers' labour registries were acts 'contrary to good morals,' and therefore indictable where damage could be shown.

In warfare of this kind the work-people are at a disadvantage as compared with the employers, yet the spirit which actuates their unions is not more tolerant than that shown by some of the employers' associations. Thus the *Textilarbeiter* wrote quite recently: 'Just as the employers keep black lists of work-people, so we must everywhere have black lists of employers who are unfit to have work-people. The workers they have must be withdrawn from them and new ones must keep away. These people must be deprived of all workers, let them rage as they will. The textile industry is an export industry, and it can be injured most effectively if it has at disposal a diminishing number of intelligent and efficient workers.' It may be said that such declarations are like firing with blank cartridge, yet they show that willingness to use high-handed methods is by no means confined to one side.

A defensive measure of a more business-like character, which is being adopted on an increasing scale, is the formation of strike

and lock-out compensation funds. This provision against loss owing to industrial disputes is made on insurance principles, though it would, perhaps, be premature to conclude that the actuarial basis of the schemes in operation is quite sound. Action of the kind was first taken by several of the large central federations, including the Association of German Employers' Federations, the Union of German Metal Manufacturers, and the Building Trades Federation. Out of Prussia the largest strike insurance federation of this kind is the German Federation for the Protection of Industry of Dresden, which comprises between 3000 and 4000 firms, employing 266,000 work-people and having a wages bill of £18,000,000 a year. There are now altogether fourteen strike and lock-out insurance organisations, to which are affiliated 250 federations of employers of various types—national, district, and local—representing 47,000 firms employing over 2,250,000 work-people. The numbers look imposing, but the operations of the insurance funds are far less impressive. The industries in which this form of insurance has been introduced include the metal, mining, building, textile, wood, tobacco, clothing, paper, printing, cutlery, and transport industries, but some

of the insurance organisations represent miscellaneous trades.

Affiliated to the compensation scheme of the Association of Employers' Federations alone are 12 associations the members of which employ 303,000 work-people and have a wages bill of £16,500,000 a year. Insurance may be effected either by an affiliated federation on behalf of its members or by individual firms. In the former case the contribution payable is 6d. per £100 of the wages paid, with a prospective small reduction proportionate to the period of membership. It is a condition of compensation being paid that the federation claiming the same must during the preceding calendar year have expended a sum equal to at least 3s. per £100 of the aggregate wages bill of its members in fighting labour movements and supporting its members in their individual struggles with the labour party. Further, compensation is not paid for the first four weeks of a strike or lock-out. The compensation payable may not exceed 10 per cent. of the wages usually earned by the work-people who are out, and the payments in respect of one day may not exceed 0.25 per cent. of the funds in hand at the close of the preceding year. Should two or more disputes or lock-outs

fall on the funds simultaneously and the amount available for compensation be insufficient to meet the full claims a proportionate reduction is made in each case.

●Where firms join the compensation scheme independently, the contribution is 6s. per £100 of the wages paid, with a minimum of £1 10s., and an entrance fee of 1s. per £100 has also to be paid. Compensation may be paid for every day of the strike or lock-out to a maximum of 25 per cent. of the average wages earned by the workers who are out, but no compensation is payable if at least 10 per cent. of the workers are not unemployed owing to the dispute. The funds are protected against excessive calls by the provision that the total amount of compensation payable for any one month may not exceed one fourteenth of the balance in hand at the end of the preceding year.

It might appear that even with the limitations stipulated the insurance funds lay themselves open to obligations out of proportion to their revenues, but there is a further safeguard in the condition that the insured associations and firms have no absolute right to compensation; the executive reserves full discretion to decide in each case upon its merits, and in particular to satisfy

itself that the strike or lock-out in respect of which compensation is asked is justifiable, and constitutes a fair claim upon the funds.

It may be asked, does neither side desire to see the relations between capital and labour adjusted by means less forcible and more formal than the crude devices of the strike and the lock-out? Something has undoubtedly been done to prevent disputes in certain trades by the adoption of wages agreements (*Lohntarife*), in which the rates of wages, and sometimes the hours of labour, are fixed for periods usually ranging from two to five years. At the end of 1910 there were in force 8300 of these agreements affecting 174,000 undertakings and 1,361,000 work-people; during the year 3240 agreements had lapsed and 4870 had come into force. The majority of the agreements had been concluded in the building, food, drink, tobacco, and wood-working trades, and most of them are of a local character. The most important and the oldest agreement of a national character is that in the printing trade, which follows the plan of fixing minimum weekly rates and scheduling percentage additions applicable to different groups of towns. Employers in the large industries, and particularly the iron, steel, engineering, and textile trades, have

hitherto resolutely and successfully resisted every effort to force the wages agreement upon them. The most noteworthy attempt made by the trade unions to compel a large industry to accept such an agreement occurred in the spring of 1911, when an ultimatum was served upon the brown coal mining companies of Central Germany, demanding the acceptance of an agreement stipulating for an eight hours' day and for minimum wages rates both for time and piece workers, representing in each case a considerable advance upon the existing earnings. The demands were refused and a strike took place at the end of April. The owners acted together with perfect unity, with the result that the strike was localised and never affected more than 8000 men, or 14 per cent. of all employed in the lignite industry. The strike lingered on until August, when the trade unions called their forces off and work was resumed without any conditions. It is estimated that the work-people sacrificed £90,000 in wages.

The weakness of the wages agreement movement hitherto has been the fact that these agreements do not possess legal force. Industrial Courts here and there have decided that agreements applying to the main body of employers in a trade should be binding

upon the minority in case of challenge, but in the main these documents have carried only the sanction of private arrangements, and they have only been honoured because of the powerful organisations behind them, ready to be mobilised at a moment's notice in case of infraction. This consideration, amongst others, has influenced the Government in its refusal to bring legislative pressure to bear upon employers who persist in negotiating wages on the old individual lines. The Secretary of State for the Interior, Dr Delbrück, stated the official attitude clearly and cogently when replying to an interpellation on the subject in the Reichstag on March 13, 1911. He said :—

'The Government is accused of negligence because it has not yet produced a Bill to regulate wages agreements. But any attempt to regulate such agreements by law would to-day, as things are in Parliament, lead not to an improvement but the reverse. Wages agreements are an economic and social necessity for a large number of undertakings, but there are undertakings for which they are unfitted, and upon these they cannot be forced. The wages agreement has triumphed wherever the economic conditions which it presupposes existed. But where these

conditions exist there is obviously no need for State interference for the mere purpose of giving to the arrangements adopted higher sanction by means of official and legal regulation. The principal source of difficulty is the absence of legal competency on the part of the trade organisations. If such legal competency existed there would be no difficulty at all, provided the organisations were placed under the common law. But so long as we simply gave the trade organisations the legal power to conclude agreements, but omitted to make them liable to the extent of their funds for the fulfilment of the contracts concluded, wages agreements would be unreal. If I am not able to attach the funds of an organisation of employers or work-people charged with breach of contract a judicial judgment will have no effect. I regard it as doubtful whether we shall in the near future agree upon this question. These wages agreements have the character of perpetual State treaties—that is, they are observed so long as the contracting parties benefit by them. I do not, therefore, regard the absence of a law upon the question as so serious as might appear. Nor must it be assumed that a law regulating wages agreements would be a simple matter. I fear that

a large number of provisions would be necessary, but I also believe that as things are our law courts are sufficient to decide what should be in an agreement, and what should not be in an agreement because opposed to good morals. In any case I do not regard the time ripe for such a law, though I admit that the subject is one of uncommon interest from a legislative point of view, and might tempt an energetic Minister to try his hand at it.'

Successful though the wages agreement movement has been in those trades to which it is specially applicable, there is no disguising the fact that, while a compact of this kind helps to preserve peace during the period for which it is concluded, that peace is usually purchased at the price of higher wages rates. The employer's readiness to pay this price cannot, however, be attributed summarily to his fondness for the wages agreement; he is probably influenced quite as much by the consideration that, as his competitors are subjected to the same higher charge, there will be more than a chance of transferring the new burden to the public. The Central Office of the Association of Employers' Federations, in its report for 1911, points out the possible effect of the latest agreement in the printing trade. 'The

Reichstag,' it says, 'is continually urging the Government to give its contracts only to firms which have wages agreements with their work-people. If the Government decides to yield to pressure it should be clear as to the consequences which will follow. The effect of monopoly of the kind is that the public will have to bear the cost. Take the case of the printing trade. The trade unions obtained an increase of 10 per cent. in wages for five years by means of a new agreement. What is the result? The principals increase the prices of printing by exactly the same amount—the consumer pays the increase. For the printing trade alone the increase means from £500,000 to £600,000 a year, or from £2,500,000 to £3,000,000 for the five years during which the agreement will last, and this amount the consumer will have to pay, in order to guarantee the workmen the higher wages stipulated for by their agreement. But the good-natured consumer will not for ever be willing to bear the costs of all the disputes to which these agreements give rise.'

The attraction of the wages agreement for the workers is natural, since they have much to gain and nothing to lose by it, and the termination of one agreement almost invariably leads to the conclusion of another on

better terms. It is not surprising, therefore, that one in eight of all the strikes which occurred in Germany in 1911 arose out of demands for the conclusion of wages agreements, and that one in four of all the strikers left work for the same purpose.

Conciliatory machinery of a large kind is as yet lacking. The Industrial Courts which exist to the number of 936 for the settlement of individual civil disputes, may, on requisition, act as courts of conciliation and arbitration in collective disputes, but their operations in this sense are insignificant.

There is nothing answering to the statutory and voluntary conciliation and arbitration boards which have done so much for industrial peace in this country. Not only so, but while the trade unionists would welcome a central institution for the settlement of disputes—under satisfactory guarantees—the employers as a whole are strongly opposed to any schemes of the kind. They advance the curious plea that a State tribunal could not afford to be indifferent to the public and social aspects of a great labour dispute, and, whatever the rights of the matter might be, would be sure to work for a settlement at the employers' expense. Hence they wish nothing more or better than that the

Government will keep away from the ring and allow capital and labour to fight out their struggles alone.

The only serious proposals on the subject made by the Government were those contained in the project for Chambers of Labour introduced in the Reichstag in 1910, but held up after they had been discussed in second reading. These Chambers were intended to act as conciliation and arbitration boards, as well as wages boards in sweated industries, and the members were to be elected in equal numbers by the employers and the employed in the various branches of industry in their respective localities. Railwaymen were omitted from the scope of the scheme as being State officials. The employers in general disliked the proposal, from which they expected no practical advantage, while the working classes demand that the Chambers of Labour shall be formed of labour representatives exclusively, and be made subsidiary to an Imperial Labour Department created to watch the special interests of labour. So for the present the matter rests.

Outside Parliament there is a strong and growing party of social reformers which vigorously agitates for the creation of an Imperial Board of Conciliation. They do not propose

the compulsory settlement of disputes, for which in the present relationship of capital and labour neither employers nor work-people are prepared, but would place the Board's services at the disposal of either or both sides in a dispute, allowing it in the event of failure to effect a settlement to publish a full statement of the case at issue and of its own opinion thereon, leaving the public to judge between the disputants.

Modest though these proposals are, they are unacceptable to the employers' organisations for the reason which blocks all pacific endeavours of the kind. Concerted action would imply the recognition by the employers of the labour organisations, and such recognition the employers are not prepared to give. Here is the kernel of the whole labour difficulty in Germany so far as the employers are concerned. It is not a question of wages or other conditions of employment, but of the claim of the trade unions to negotiate with the employers and their organisations on equal terms. The employers refuse to negotiate with the unions at all, and insist that no intermediary shall come between them and their work-people. In the words of one of the best known literary spokesmen of industry, 'Since employers alone create work they alone

have the right to dispose of it as they will.' What the leaders of the large industries in particular want and aim at, is the repression of trade unionism as a fighting force. Not only so, but many of their number believe that they are on the way to success. Hence the enormous expenditure which is being incurred in efforts of many kinds intended to counteract and paralyse labour organisation—in the maintenance of their own associations, labour registries, and advice agencies, in the subsidising of the 'Yellow' organisations of work-people, in the support of voluntary benefit funds and benefactions of all kinds, the offer of bonuses and premiums for good service, and so forth. To the English observer the German employer may appear to be engaged in a struggle with forces and tendencies beyond his power to control. He does not believe this, however, and the strenuous fight he is making in the full conviction that victory will be on the side of his big battalions is, perhaps, the most interesting incident in German industrial life at the present time.

CHAPTER X

THE HOME INDUSTRIES

A STRIKING illustration of the tenacity of life often shown by old and threatened institutions is afforded by the home or house industries of Germany. In spite of the domination of the factory system and the replacement to a greater or less degree of hand by mechanical production in almost every industry, these industries still provide employment for little less than 500,000 persons. Not only so, but having regard to the adverse odds against which they have to contend, the ground lost during the twelve years which intervened between the last two occupation censuses was insignificant.

The census of June 12, 1907, showed that the number of persons employed in the home industries was, according to their own returns, 405,262, viz., 170,712 males and 234,550 females, comparing with 457,984 (256,181 males and 201,853 females) in 1895, showing a decrease of 52,812, the male workers having declined by 85,419 and the female increased by 32,607. Accepting the returns of the employers and middlemen,

however, the number in 1907 was 482,436, viz., 154,988 males and 327,448 females, comparing with 450,711 (221,246 males and 229,465 females) in 1895, showing the slight decline of only 8275, the male workers having decreased by 66,258, while the female workers had increased by 57,983. Of these workers 211,789 were employed in Prussia, 149,435 in Saxony, 23,461 in Bavaria, and 23,355 in Württemberg the four kingdoms thus accounting for 85 per cent. of the whole.

Great though the variety of these industries is, nearly one-half of the home workers were employed in the textile trades, and a third in the clothing trades, including tailoring, dressmaking, shoemaking, etc. As might be expected, the industries showing the greatest decline are those which have been specially invaded by machinery, e.g. weaving, clock-making, brush and comb, horn button, and toy making.

Broadly speaking the home industries may be divided into two groups, those carried on in the rural districts and the hill country, and those found in certain of the large towns. While, however, the most important of these industries and the majority of the workers engaged in them fall into these groups, there is a mass of miscellaneous home industry,

scattered all over the country, much of which is distinctive in character and strongly localised. The conditions upon which these industries are carried on vary greatly. The home worker may follow his employment as a sole means of livelihood; or such employment may be of a subsidiary character, and supplementary to a main occupation; or, finally, home work may be done, as is the case often in the households of the lower middle class, for the sake of 'pin-money.' Home workers of the last kind, however, seldom so describe themselves, and they figure but little in the official occupation returns.

Where home work is done in the towns it is generally either an exclusive occupation or a necessary device for supplementing the earnings of the bread-winner. In the country, on the other hand, a large proportion of the home-workers follow industry as a secondary occupation, and for the rest are engaged in various forms of agriculture. Many heads of families so employed own small farms or 'parcels' of land. Thus the characteristic feature of the life of many Thuringian villages is the combination of home industries with agriculture and stock-raising. Nearly every household has a small holding or at least a piece of land—often at a considerable

distance from the home—upon which potatoes and a small quantity of corn are grown and several goats grazed.

Among the important home industries concentrated in large towns and their suburbs are the clothing trade in Berlin, the tobacco and cigar trade in Hamburg, the silk trade in Crefeld and Elberfeld, and the hosiery trade in Chemnitz. The greater part of the ready-made dress (*confection*) trade of Berlin depends on outworkers, who have no direct dealings with the 'manufacturers,' as the merchants are called, but are engaged by middlemen, who give out the materials and fix and pay the wages. It is estimated that 4000 middlemen and 50,000 outworkers—mostly women and girls—are engaged in the ladies' clothing trade alone in Berlin.

Nevertheless, in their most characteristic forms the home industries are found in the rural districts, and particularly in the hilly regions of Central and Western Germany. These industries stretch in an almost unbroken chain from the hill country in the east to the Vosges Mountains in the extreme west. The weaving industry of the Eulengebirge and the Riesengebirge joins on to the Silesian glass industry and the weaving and garment making industries of the Lusatian

Mountains. Then come the toy, smallware, embroidery, clothing, and musical instrument industries of the Erzgebirge and Saxony. Thuringia has its small iron and metal, wood and meerschaum carving, toy and basket industries. In the Fichtelgebirge is found hand weaving; south of the Thuringian Forest are toy and wood industries; the Odenwald is the home of a portfolio and leather goods industry; in the Black Forest the clock, ironwork, and straw hat industries flourish; farther to the south, wood-working and cotton and silk weaving are carried on as house industries, while in the Vosges Mountain districts weaving and bead embroidery are common. Travelling north again, many home industries are found in the hilly districts of the Lower Rhine, particularly the small iron and textile industries of the Berg country.

Natural features would seem to have determined the locality of many important home industries. Thus the special homes of the wood-working and carving industries are generally adjacent to forests. The Thuringian, Harz, and Black Forest districts, and a district of Saxony south of Dresden adjoining the Bohemian Forest, are all famous for these industries. Forest and wood-working go hand

in hand in the Bromberg district of North-east Prussia and in the Garmisch district of South Bavaria. Among the most famous of the home workers are the violin makers of the Bavarian Alps, who have carried on their calling for generations.

There are two principal modes of employment. Either the home workers labour for an *entrepreneur* who supplies them with raw material and pays for the work done upon it at given rates, in virtue of which function he calls himself a manufacturer; or they provide all materials themselves and sell the finished articles to factors or merchants who either collect or receive them at their depots. The former form of enterprise is customary in the clothing, weaving, lace, embroidery, and similar industries, the latter in the toy, musical instrument, and carved goods industries.

In proportion to population Saxony has more home industries and more home workers than any other State in Germany. Its industries are extremely diversified, and include many branches of the textile industry, knitting, lace making, embroidery, and the making of leather gloves, straw hats, toys, and small musical instruments. Nearly one-third of the entire home industry of Germany is found in this little kingdom, and while in 1907 the

proportion of the industrial population engaged in home industries was, for Germany as a whole, 2·7 per cent. in the case of men and 4·2 per cent. in the case of women, the corresponding ratios for Saxony were 10·8 and 20·1 per cent. In the textile industry 21 per cent. of all Saxon workers are engaged in the home industry, and in the clothing industries the proportion is 19 per cent. Two out of every three of the Saxon home workers are women and girls, for there is an increasing tendency for the men of the household to seek work in factories.

A German home industry of special interest to this country is toy making. Twenty years ago the value of the toys produced in Germany was estimated at £3,500,000; that sum is now less by £1,000,000 than the value of the exports alone. The United Kingdom buys German toys to the value of over £1,000,000 a year, and this country and the United States together take more than half the whole export trade. The original centres of the industry were Nuremberg and Furth in Bavaria, Sonneberg in Thuringia, and the Saxon Ore Mountains, and the toy makers of these districts still supply the greater part of the foreign trade. A large industry now exists in the Prussian provinces of Silesia,

Brandenburg, and Rhineland, however, supplying in the main the home market. The total output of the toy industry at the present time probably falls little below £7,000,000.

Famous as the products of this old industry are, few people are acquainted with the social or technical conditions under which they are produced. An increasing number of toys are now made by machinery in factories, particularly at Nuremberg, but the old-fashioned toys in which children chiefly delight—dolls, animals, and wooden articles in general—are still made in the homes of the workers. If the remuneration is no worse than in the home industries generally, the work itself is often extremely monotonous. Many men and women are engaged from year's end to year's end upon minute operations which scarcely vary by a turn of the hand. For under modern conditions of production there is a large division of labour even in the making of the simplest toys. The Noah's arks and other collections of otherwise uncreated animals are not made in a single house or workshop, but pass through a number of hands; one worker cuts the wood in the rough, another turns it or splits it into pieces of convenient size, another carves the various parts, and yet another

puts these parts together with glue or nails. Afterwards there follow in turn the painter, the boxmaker, and the packer, before the toy is ready for sale. In these operations men, women, and children are engaged during long hours for scanty pay, and the Factory Acts avail little or not at all to prevent a notorious drain upon the health and strength of both juvenile and adult.

Low wages and excessive hours of work have hitherto proved inseparable from the rural home industries, and from those carried on in the towns in only a minor degree. Representatives of the toy industry of the Ore Mountains present at the Berlin Congress of Home Workers of 1911 instanced wages of 8s. 6d. a week for an entire family working fourteen and fifteen hours a day. As the result of his investigations Herr Paul Göhre came to the conclusion that the weavers of the Ore Mountain districts earn on an average from 6s. to 9s. per family for a long week of work, and in better times from 10s. to 12s. For these earnings either husband or wife will work closely all the week, while other members of the family give occasional assistance. The same room in which the spinning-wheel and handloom stand serves as kitchen, living-room, and bedroom, unless there is an

attic, in which case the whole family sleep there. A Labour deputy in the Reichstag stated in the course of the debate in March, 1908, that the average wages of whole families working at home in cigar making did not exceed 10s. a week all the year round, and that for these earnings excessive hours had to be worked. Low wages are, indeed, accepted as the normal characteristic of these industries. Not long ago an old home weaver in Bavaria applied to the Pension Board for his district for an invalidity pension on the ground that he was no longer able to earn the stipulated one-third of the wages usual in his occupation. The application was rejected on the ground that (to quote the official report) 'All you suffer from is bad nourishment, as is often the case with home weavers.'

Nor are the evil effects of inadequate wages confined to the home workers, for the increase of their remuneration tends to become the measure for other local workers, so that where the home industries occupy a dominant position the entire standard of life of the labouring classes is depressed. The only people who appear to earn a decent livelihood are the men who give out the work, and they in many cases, as the reward of little exertion and no risk, appropriate the

lion's share of the selling price of the goods made. Naturally the employers of these workers have no desire to see home industry decay. It enables them often to work with little capital, especially where the workers provide the raw material, they have no high factory rents to pay and no large establishment charges to bear, and their trade risks, such as they are, are covered always, for when certain classes of goods are not in demand they can simply cease to employ the workers who have hitherto produced them, or put them on to other goods. Further, as they buy by the piece and fix the piece rates so as to allow a sufficient margin of profit, their gains may fluctuate but they are never wiped out.

The effect of these industries upon home life is in general pernicious. 'Can it be called family life,' asks Professor Sombart, 'when the home, the place in which the family should rest from the heat and burden of the day, is converted into a workshop where the daily bread is earned by body and soul depressing toil? Rather is labour here a poison which eats away the last traces of home and family life.'

Writing of the home industries of the Ore Mountain districts Herr Paul Göhre says,

'One of the most terrible incidents of the toy industry is child labour, which is not merely occasional but systematic. Like father and mother every child over seven or eight years is, as a matter of course, a regular co-worker and co-earner, and, indeed, without the work of the children most of the families engaged in the toy industry of the Ore Mountain districts would not be able to keep above water, but would simply die of hunger. The child of the Ore Mountains is the support and comrade of his poor parents, and, however hardly poverty may press upon the latter, most of them are weighed down still more by the bitter necessity of chaining their children daily and hourly to the yoke. And yet against such compulsion they are helpless. No freedom, no relaxation, no romping in the open air and in the beauty of their native hills, but a daily exhausting torment in a narrow room—that is the fate of a large part of these children.'

As might be expected, the health and physique of children so exploited are often undermined. Describing in a recent book the results of his investigation into the social conditions of home workers engaged in the toy industry in the Ore Mountain districts, Dr E. Westenberger classified the children

in attendance at a village school according to physical condition. Of thirty-three children in the first class seventeen were found to help their parents in toy making; and of these two were quite degenerate, three were physically defective, three were mentally defective, and two suffered from chronic illness. Of twelve children in the second class ten similarly worked at home, and of these three were degenerate, three were physically defective, and two were mentally defective. In other words, two-thirds of all the children who were employed in this industry out of school hours were physically debilitated or wrecked.

Perhaps the most hopeless aspect of the problem of the home workers is the helplessness of these people, a helplessness generally combined with a fatalism which causes them to tolerate their lot complacently, and to accept as normal and unalterable conditions which are often pitiful in the extreme. Something has been done here and there, and more may be done, by organisation; but combination is a matter of great difficulty, owing to the isolation of these workers, their economic dependence and consequent fear of the effect of concerted action, their general social backwardness, and, not least, their inability to spare from their meagre earnings the

contributions necessary to the support of efficient trade unions. Hitherto also the home workers have been entirely outside the influence of the Sickness Insurance Legislation, and with the exception of two groups of workers—those in the textile and tobacco trades—of the Invalidity Insurance Legislation as well. The revision of the Insurance Laws made in 1911, though it gives to the whole of them the benefits of sickness insurance, leaves them (with the exceptions named) still without prospect of invalidity and old-age pensions.

Happily the problem of the home worker is forcing itself upon the mind and conscience of the nation. A collection of products of the home industries which was publicly shown in Berlin and other large cities of the Empire several years ago did much to direct public attention to the darker sides of the life of these industrious workers, and especially the miserable wages paid for exhausting labour. Societies have been formed for the purpose of helping the workers, of fighting their battles where and when battle can wisely be given, and of pressing upon the legislature the need of legal measures of regulation, while conferences are held yearly at which various aspects of the problem are considered

in the light of accumulating observation and experience.

Already the Government has responded to the call for legislation, and the 'Home Work Law' of December 20, 1911, will do something to protect the health if not the pockets of these workers. Its principal provisions require that employers who give out home work shall keep lists of their workers, which lists shall at all times be open to inspection by the police and factory inspectors. As regards children under sixteen years, the hours of beginning and ending work and the intervals during the day are to be prescribed by the police authority, and power is given to forbid the performance of home work on festivals and on Sundays during church hours. Certain requirements are also enforced with respect to the suitability of the rooms in which work is done. The law proceeds on the lines of the English Trade Board legislation to the extent that it creates committees of experts for different trades or districts to help in supervising the administration of its provisions, to assist the Government with advice and information, and to collect statistics. It stipulates that lists showing the rates of payment shall be exhibited upon all premises where material for home work is

given out or the finished work is returned, and that the workers shall be given wages books or lists containing particulars of the work to be done and the rates of payment for the same. Provision is also made for preventing unnecessary loss of time to out-workers when attending upon their employers to receive or return work.

Where the law fails, and where the Government, in spite of persistent pressure, was obdurate, is in the omission to provide machinery for securing to the home workers minimum subsistence rates of wages. The advocates of wages boards strove to obtain their legal recognition, but they failed to allay the Government's fear that if the wages question were touched the export trade might be endangered. For the doctrine of parasitic industries has made little headway in official circles in Germany. The result is that, in the words of the Berlin Congress of Home Workers held in 1911, the law leaves the question of wages just as it was, to be determined by 'unrestricted competition and individual caprice, and the exploitation of need, ignorance, and social inexperience.'

And yet, as ex-Minister of State Baron von Berlepsch truly said at that congress, 'The wages question is the kernel of the

problem of the home workers, and any laws that disregard that question will do little to solve the problem.' He added: 'It is said that we should not make a leap in the dark, for no one knows what might be the effect upon the export trade and upon certain classes of the outworkers themselves. But German legislation should not always be frightened of making a leap in the dark. The uncertainty as to the effect of laying down minimum wages in the home industries is not nearly so great as it was with regard to the effect of the social (insurance) laws when they were introduced. If the English legislature has not hesitated to regulate wages in the home industries in a prudent and moderate manner, we may with confidence follow that example. The further objection that by so doing we should be taking the first step towards a general legal regulation of wages should likewise give rise to no apprehension. Until the middle of the last century the wages of miners were fixed by the mining authorities, and the Labour Protection and Insurance Laws imply a certain indirect influence upon wages. A general legal regulation of wages is absolutely impracticable and would by no means be desirable in the interest of the workers. But there are circumstances in which that

right principle should be departed from, and, in the case of so miserable and pitiable a class of workers as those engaged in the home industries, a class unable to help itself by organisation, the principle of non-intervention cannot be appealed to.'

Some allowance must, of course, be made for the Government's excessive caution. Any sudden and sweeping measure designed to raise the wages level of these industries to that of the factory industries might inflict great present hardship upon large bodies of people by changing their ill-paid employment into no employment at all. And, parasitic though some of these industries may be, only the extreme social reformers of the Socialistic school wish to see the home industries extinguished altogether. Admitting that these industries represent an ancient method of production, the Socialists contend that this method is obsolete and can have no place in the modern industrial system. The truth is that no form of production which can be carried on efficiently, and on conditions equitable to those engaged in it, can be regarded as obsolete. The task to be faced is that of adapting the conditions of home industry to the requirements of a humane and healthy social life.

CHAPTER XI

THE COLONIAL MOVEMENT

It is now nearly thirty years since the outbreak of acute colonial fever which set Germany, for a time in a wellnigh delirious mood, on the path of foreign empire. It was a long time before the national temperature became normal, and there have been occasional fluctuations since, yet on the whole Germans are now able and disposed to view the colonial question coolly, freed at once from illusion and groundless apprehension. And while they all admit frankly that the colonial movement has not 'marched' as it was expected to do, they none the less regard the colonies as a necessity, and are willing to bear the sacrifice which imperialism of this form entails. Prince Bismarck, on the whole, judged the colonial question, like most other purely practical questions, shrewdly and accurately. He was no 'colonial-politiker' himself, and was drawn into the movement against his will by a little knot of Chauvinists who envied England's colonial luck and prestige, and were ambitious to see Germany become similarly a proud mother of nations, but he never disguised his opinion that the movement came too late to be successful.

'No man goes so far,' said an astute English political thinker, 'as the man who does not know where he is going.' The truth of the saying has been well illustrated by Germany's experience of colonisation. It began with a few sandhills and swamps in West Africa; now it has possessions of enormous extent, entailing responsibilities no less enormous. 'We neither can nor want really to colonise,' said Bismarck on one occasion; 'our artisans and lawyers and time-expired soldiers are no good as colonists.' His idea, therefore, was to proclaim protectorates for purely trading purposes. The Imperial Government was to assert spheres of interest and the merchant and planter were to do the rest. 'My axiom,' he said, with a fine disregard of Prussian bureaucratic traditions, 'is that the merchant and not the official shall rule in these regions. Our Privy Councillors and subalterns are quite admirable people at home, but I want from the Hanseatics out there in the colonial territories more than they are capable of.'

By a curious irony of fate, of the twenty thousand Germans who are to-day scattered over the million square miles of Germany's colonial empire, at least one-half are civil servants, soldiers, and police from the father-

land. The cause is not far to seek. The colonies represent every climate and every degree of fertility, but where the climate is suited to Europeans the natural resources are insignificant, and where the natural resources are of genuine value the climate is a fatal obstacle to settlement by whites. Hence it is that, in spite of prodigious expenditure, the German colonies as yet have been but little developed, and the in-and-out trade with them has expanded slowly.

Undoubtedly the development of the colonies has been hampered by the want of a clear and continuous policy. Even now nearly every political party has a different theory of colonial politics. The Conservatives are attracted by the idea of territorial expansion, though not quite convinced that expansion in dark continents is the most advantageous form it might take; the Radical accepts the colonies as a purely business proposition—he did not want them, was compelled to buy them against his will, but having paid dearly for them he will keep them, hoping that they will one day prove useful; the Centre regards them from the standpoint of Germany's civilising mission, and has never wearied in emphasising the idea of duty towards the natives as at least equal

in urgency to that of right; while the Socialists would rather have no colonies at all, but, as they exist, would develop them for the sake of the native populations, and would probably be willing to give self-government and a model republican constitution to the Bantus and Hereros to-morrow. The only people who really know their own minds on the subject, and are consistent in pressing their views on the Government, are those in whose name the *Rheinisch Westfälische Zeitung*, the special organ of the great industrialists, wrote not long ago:—

‘Why does Germany carry on colonial policy? In order that we may be able to hail several million Bantus, Hottentots, and Massais as brothers and fellow subjects? Why have all the German pioneers gone to Africa; why have 2000 Germans laid down their lives in the South-West? In order to save the precious moral Hereros from the despicable white traders? To what purpose have we governed our protectorates for twenty years? In order that negroes, Papuans, Indians, and other inferior peoples may appear against our planters and officials in the courts as equals? Wherefore has the German nation expended hundreds of millions (marks) on its colonies? In order that Indians and Greeks may do business there and the Ger-

man himself be hoodwinked? To ask all these questions is to answer them with a negative.'

The obvious implication that the colonies and their inhabitants have been annexed to the German Empire in order to be exploited in the interest of the home country represents a clear conception of colonisation and colonial government of a sort, but it would be unjust to regard it as in any way reflecting the national sentiment.

Without counting the vast Congo region just added to Germany's colonial empire by the Morocco agreement with France, the extent of territory is now estimated at over 1,000,000 square miles, and its population at over 14,500,000, distributed as follows:—

	Area in square miles.	Population.
East Africa	384,180	10,028,000 ¹
South-West Africa	322,450	82,000
Cameroon	191,130	2,719,000
Togo	83,700	1,000,000
Kiau-chau	200	167,000
Kaiser Wilhelmsland	70,000	531,000
Bismarck Archipelago	20,000	
Marschall Islands	150	55,000
Solomon Islands	4,200	
Caroline, Pelew, and Marianne Islands	. 710	—
Samoa Islands	1,000	37,000
	<hr/> 1,027,720	<hr/> 14,619,000

¹ The German Government published this figure in 1911; it now says that a reliable estimate of the population of German East Africa is not available.

It will be seen that on the whole the population is very sparse, the average density being under fifteen inhabitants to the square mile.

It will be instructive to inquire the extent to which the colonies have been developed and have fulfilled, or seem likely to fulfil, the expectations originally built upon them. The serious colonial politician claims that the colonies should be put to one of three purposes, viz., they should (1) serve for the settlement of German population, so directing emigration into German territories and retaining the emigrants under the national flag; or (2) provide raw materials for the home industries; or (3) provide new markets for German industrial products.

As to the use of the colonies for settlement, a large literature has been published to prove the desirability of directing emigration thither, but few people wish to go, and least of all the writers of the books. The East and West African colonies are unfit for whites. The planters and traders who go there seldom bear the climate more than a few years at once, and the necessity for frequent changes in the managing staffs is unfavourable to efficient organisation as well as a source of heavy expense. South-west Africa is on the whole favourable to the European, and there is

a continual movement to and fro, but, as few farmers stay long, the white population does not increase. In 1911, 5050 persons arrived in the colony, but 4300 left it. During the five years ending 1911, 284 of the 1141 farms which have been taken up changed hands, some of them several times, and in some districts the changes exceeded 40 per cent.

The total number of white inhabitants in the whole of the colonies and protectorates in 1911 was only 25,436. In East Africa there were 4227 whites—3113 being German subjects; in Togo there were 363—all but 86 Germans; in Cameroon there were 1455—1311 being Germans; in South West Africa 13,962—11,140 being Germans; in the Bismarck Archipelago and Kaiser Wilhelmsland there were 723—145 being Germans; in Kiau-chau 8896—all but 90 being Germans; and in the rest of the colonies 891, of whom 478 were Germans. Of the German population of 20,753, however, only a small part can be regarded as settled. More than a quarter consists of military and police, and when deductions have been made for civil officials, clergymen and missionaries, railway servants and work-people who are temporary residents, it is clear that the genuine white immigrant is rare. Taking the colonies as

a whole, there is one German to every fifty square miles of territory.

As a source of raw materials for the home market the colonies have not proved more satisfactory. On the whole the native populations of the tropical colonies are averse to settled industry and in large part phlegmatic or indolent, low in civilisation, without progressive instincts, conscious of only the most elementary needs, and eager neither to buy nor sell. In these colonies two forms of exploitation are possible, viz., either to lay down plantations for the systematic production of tropical crops on scientific farming principles, or to rely upon such crops as the natives may be induced to collect from the store which nature provides, such as palm kernels, nuts, palm oil, copra, wax, etc.

In East Africa endeavours have been made to create a peasant proprietary, and though the Indian *rāyat* is never out of the mind of the plodding German official, the prospect of training up such a class of cultivators is for the present remote. Even the certain prospect of higher gain by systematic methods of cultivation does not induce the native labourer to exchange his spasmodic effort for steady work, and rather than be bound to land of his own he prefers still to live by collecting

wild crops. On the other hand, plantation culture is not possible generally; the soil is of very unequal fertility, and all that the planters can do is to select favourable areas where they are found and do their best in face of an almost general scarcity of labour.

In Togoland, under different conditions of climate and soil, it is much the same. Dislike of regular work and absence of needs are obstacles against which the European settlers contend in vain. Even when implements are lent and seed given to induce the native to do something for himself, he will perhaps sow the seed but refuse to reap the crop. On the whole the Ovambos are the best and the Bushmen the worst of the tribes.

How little the colonies are yet able to contribute to the needs of the home country will be understood when it is said that of all Germany's imports of cotton and coffee only one-fourth per cent. comes from that source, of palm kernels $2\frac{1}{2}$ per cent., of copra $5\frac{1}{2}$ per cent., and of rubber 14 per cent. It was hoped that the colonies would long before now have supplied an appreciable part of the 500,000 tons of cotton which Germany needs every year, but the difficulty and expense attending the introduction of the plant have proved a severe test of both faith and patience.

In East Africa many German and European planters grow cotton on a small scale, and, by means of experimental farms, prizes, and the free offer of implements and seed, an endeavour is being made to enlist the interest and industry of the natives in the crop. For the rest the principal plantation crops in East Africa are coffee, rubber, sisal, and, to a less extent, sugar and rice, whilst the natives supply rubber, copra, earth nuts, and sesame.

Besides 1000 tons of cotton, Togo produces palm kernels, maize, rubber, and copra, with a little cocoa.

Cameroon is being more and more developed as a plantation colony; forty-four plantation companies of all kinds were engaged in 1911, the area under cultivation being some 40,000 acres, the greater part under cocoa and the rest under rubber, oil palms, and bananas.

South-West Africa has not yet recovered from the war. Before the extermination of the Hereros it was a prosperous grazing country, and exported a large quantity of cattle; the exports are now quite nominal. Nevertheless, the land is being slowly settled by European proprietors and farmers, and in 1911 there were 1140 large farms in private ownership. As an agricultural colony its worst defect is water. For the present the

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colony lives chiefly by its diamond trade, though this is a source of wealth which appears likely to be soon exhausted; it may give German South-West Africa a fresh start, but it cannot keep it going; some estimates, indeed, place the life of the mines at under ten years.

The islands of the Pacific supply for the most part tropical produce, such as copra, rubber, cocoanuts, cocoa, and coffee, except the West Caroline and Marschall Islands, which yield a certain amount of phosphate.

Finally there is the trading aspect of the colonies. Here, too, progress has been slow, though of late years the prospects have improved. The total trade of the colonies in 1910 reached a value of £11,500,000, the imports being £6,500,000 and the exports £5,000,000. About two-thirds of this trade are done with Germany, while of the rest a not inconsiderable part falls to the United Kingdom and British Colonies. Germany's share was as follows:—

	Imports.	Exports.
East Africa	£983,850	£629,250
Cameroon	999,550	862,400
Togo	314,900	226,300
South-West Africa ..	1,722,750	1,433,700
New Guinea	84,800	118,550
South Sea Islands ..	71,400	235,950
	£4,176,750	£3,506,150

These figures show steady and gratifying progress, and together represent a five or six fold increase as compared with ten years ago. Unfortunately, however, there are two important fictitious elements in the values stated. These values are taken at the port of arrival, so that a high proportion consists of freightage charges. Thus, the agricultural machinery imported into East Africa is valued at £3 5s. a cwt., while the same imports into Germany figure in the trade returns at a value of under £2 a cwt. Further, a very large proportion of the imports consists of merchandise of various kinds required by the white settlers, and not least by Government officials, troops, and police. It is questionable whether half the trade here stated can be attributed to the fact of territorial possession.

Of a colonial empire so little favourable to development, it is far easier to speak of what remains to be done than of what has been achieved. And yet a good beginning has been made, if at cost which may never give a direct return. At the end of 1911, 2160 miles of railway had been built and opened to traffic, and 430 miles more were in course of construction, making a total of 2590 miles, of which 750 miles were in East Africa (two lines), 325 miles in Cameroon (two lines),

200 miles in Togo (three lines), and 1310 miles in South-West Africa. An addition of 460 miles had been made to the lines in working during 1911, the largest increase hitherto made in a single year. There were 193 post offices, through which 15,000,000 consignments passed, and 116 telegraph offices. Further, 37 harbours of all kinds were open to trade in the various colonies, and 3230 merchant vessels (Government vessels excluded) called at these ports during the year.

Owing to the fact that it is a naval and military station, more has been done for the development of the protectorate of Kiau-chau than for any of the colonies. It is claimed that since the German occupation this dependency has been converted into a veritable pearl; the pearl certainly is one of great price, for it has cost Germany more millions than will ever be seen again; the subsidy needed to balance expenditure still exceeds £400,000 a year. The Government has thrown itself into the work of developing and Europeanising Kiau-chau with characteristic energy and thoroughness. Great defensive works have been erected, a beautiful town has taken the place of a miserable handful of hovels, industry and trade have been encouraged, and a university has been sea

It is too early to form an opinion as to the economic value of Germany's new Central African possession as secured to it by the Franco-German agreement of November 4, 1911. All that is known with certainty is that much of the region is unfitted for Europeans, and that owing to the unfavourable health conditions the native population is perpetually exposed to the ravages of smallpox and sleeping sickness, which at times depopulates whole districts. There is little cultivation, and nearly the whole of the products sold to the white traders—rubber, ivory, oils, fats, etc.—are gathered in a wild state, though there is a small production of cocoa, coffee, and cotton.

The revenues of the colonies are derived from customs duties and various taxes, such as the house tax, hut and poll taxes, trading taxes, land taxes, spirit and beer taxes, taxes on dogs, cheques, etc., but these revenues fall far below the necessary administrative expenditure. Colonial empire cannot be adequately valued in terms of money gain or loss. This, however, is still the commonest method of equating the colonies in Germany, and if it be applied it will be seen that the trade with the colonies is dearly purchased. Only one of the colonies, little Togoland,

pays its way; all the rest require substantial subsidies from the German tax-payers to an aggregate of over £1,500,000 sterling, in addition to incidental expenditure of great amount in the cost of colonial administration at home, mail subsidies, the maintenance of vessels of war in colonial waters, etc.

Nevertheless, Germany, having set its hand to the plough, will not go back. An obligation thus taken up cannot be lightly put away, for honour as well as interest is heavily at stake. It is all to the good that the colonial movement has settled into more serious and practical lines, and that the more thoughtful of its leaders and friends are no longer in doubt as to the magnitude of the task which has to be faced. For the new and soberer spirit which has come over the movement the ex-Colonial Secretary Herr Dernburg deserves more credit than he has yet received. On taking office six years ago the banker Dernburg found the colonies in bad repute, the nation weary and disgusted with a long record of failures, administrative as well as commercial, merchants distrustful, financiers indisposed to throw more good money after bad, politicians cynical and thirsting for some one's blood, and the Government itself harassed and dejected. Some of Herr Dern-

burg's methods may have shaken the nerves of old-fashioned politicians, some of his speeches were certainly histrionic, and many of his promises unguarded, yet to him belongs the credit of having revived the failing faith of the German nation in its oversea empire; at a time when Radical deputies were proposing to sell out he promptly stepped forward and liberally saved the enterprise by putting more money into it; thus checking panic, reviving confidence, and shaming the pessimists.

Not only so, but he is the first Colonial Secretary who deliberately took up the cause of the native populations and insisted that Germany had moral duties towards the natives as well as political rights over them. For this he suffered endless odium, but it was odium of a kind that men of principle value. He put an end to much systematic cruelty, and insisted that the military punishment of native labourers must cease and the law be invoked by the white and coloured populations on equal terms. He set bounds to the demoralisation of the natives by brandy, and largely abolished a forced labour which was hardly distinguishable from slavery.

While in some of the colonies the negro labourers had been forbidden to have plantations of their own, so that their labour might

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