1929, the greatest decline occurring in 1932; but the fall seems to have been arrested in the spring of 1933, and the latest figures available at the time of writing show a moderate increase in most industries in weekly earnings, though hourly earnings show as yet no increase. Hours of labour in manufactures have declined from about 48 in 1929 to well under 40 in 1933, hourly earnings have declined by 20-30 per cent. and hence weekly earnings have declined by about 40 per cent. This general average is subject to very wide ranges as between different industries. Finally, it should be emphasised that the figures given above are all based on returns supplied voluntarily by industrial establishments, and though they form in some cases a very large proportion, they do not cover the whole field. As indicating percentage changes in wages and hours from month to month, the figures are probably satisfactory, but as indicating the amount or level of wages at any date, it is advisable to quote the following statement by Dr. Leo Wolman, of the National Bureau of Economic Research:

"There remains the strong probability that an increasing number of small new firms throughout the country are operating with abnormally low wage scales. Because of the difficulty of adjusting statistical samples to rapidly changing industrial conditions, it is a fair inference that such scales are not yet adequately represented in the series collected and published by our public statistical bureaux."<sup>1</sup>

# Wages and Hours of Work in the Coal-Mining Industry in 1931

In 1932 the International Labour Office undertook a further enquiry into conditions of work in the coal-mining industry. The enquiry related to the year 1931 and was carried out on similar lines to those adopted for the three previous enquiries of 1925, 1927, and 1929.<sup>2</sup> Its essential results, for wages and for hours of work respectively, are given below.

<sup>&</sup>lt;sup>1</sup> Op. cit., p. 5.

<sup>&</sup>lt;sup>2</sup> Wages and Hours of Work in the Coal-Mining Industry. Studies and Reports, Series D (Wages and Hours of Work), No. 18. Geneva, 1928. 279 pp.

<sup>&</sup>quot;Wages and Hours of Work in the Coal-Mining Industry in 1927", in International Labour Review, Vol. XX, No. 4, Oct. 1929 (Wages), and No. 6, Dec. 1929 (Hours of Work); Errata: No. 6, Dec. 1929, p. 903.

<sup>&</sup>quot;Wages and Hours of Work in the Coal-Mining Industry in 1929", in International Labour Review, Vol. XXIII, No. 5, May 1931; Errata : No. 6, June 1931, p. 937.

## PART I: WAGES IN COAL MINES IN 1931

The same questionnaire was used as for the previous enquiry. Replies to it were received from the following countries :

European cou	Non-European countries	
Belgium Czechoslovakia	Great Britain Poland	Canada India
France	Netherlands	Japan
Germany	Saar	South Africa

As on previous occasions, only the information relating to European countries is sufficiently complete to serve as a basis for international comparisons. Owing to the special conditions attaching both to the production and to the mining statistics of non-European countries, comparisons are not possible with those of European countries. The information received from these countries is however included in the tables where possible.

The following figures show the distribution of coal production in Europe in 1931; it will be seen that the European countries covered by the enquiry produced 88.6 per cent. of the total.<sup>1</sup>

Country	Gross production (in thousands of metric tons) <sup>1</sup>	Percentage of total production <sup>1</sup>
Belgium	27,042	4.8
Czechoslovakia	13,103	2.3
France	50,023	9.0
Germany	118,640	21.3
Great Britain	222,981	40.0
Netherlands	12,901	2.3
Poland	38,265	6.9
Saar	11,367	2.0
Russia	53,543	9.6)
Spain	7,186	1.3 \ 11.4
Other countries	2,867	0.5
	557,918	100.0

<sup>1</sup> Figures provided by the Secretariat of the League of Nations and not always corresponding with those of table VI in the Appendix. The small differences for some countries are generally accounted for by the scope of the wage statistics used later on or by varying methods of estimating total production.

The present enquiry, like its predecessors, relates solely to bituminous and anthracite coal mining, excluding lignite mining, except ln France, and Canada. The production of this fuel in France being insignificant (2 per cent. of the total extracted from underground mines) and its calorific value relatively high (two-thirds of that of bituminous coal), the resulting error in the general averages is

<sup>&</sup>lt;sup>1</sup> World production in 1931 amounted to about 1,074,600,000 metric tons; the United States alone supplied about 40 per cent. of this total (400,735,000 tons). Among other non-European countries may be mentioned : Japan (25,795,000 tons), British India (22,065,000 tons), South Africa (10,881,000 tons), Australia (9,100,000 tons), and Canada (8,466,000 tons).

negligible; in Canada, mining operations are stated to be substantially similar for lignite and bituminous coal. Moreover, the enquiry aims at covering the working conditions of manual workers only, excluding wherever possible supervising and salaried staff as well as workers in ancillary establishments (coke ovens, briquette factories, etc.). In practice, however, the last-named category of workers in particular cannot always be eliminated from the statistics, as will be seen later on.

The calculation of the average labour cost per coal-mining worker is based, as in the previous enquiries, on the total labour costs of the coal undertakings. From this figure, together with the data concerning the average number of workers employed, the number of shifts worked, and the number of tons of coal produced, the average labour cost per worker per shift and the average labour cost per ton of coal have been calculated. As in 1929, the only subdivision of workers by categories that has been possible is that into the two fundamental categories of surface workers and underground workers.

Statistics of the basic figures are given in tables I to VI in the Appendix. These tables show respectively the composition of the total labour costs (table I), their distribution by categories of workers (II), the total number of shifts and days worked (III), the total number of shifts lost (IV), the average number of workers (V), and the total production of coal in certain countries (VI). The averages in this report are all calculated from these basic tables.

### THE BASIC DATA

#### Composition of the Total Labour Costs

The "total labour costs" include certain other items in addition to the money wages paid to the workers for work done. These consist of: (a) the various allowances either in money or in kind, and payments for holidays, and (b) employers' and workers' social insurance contributions. The introduction of the latter item has been sufficiently discussed in the previous reports, especially with regard to the employers' contributions. It will therefore not be further discussed here; but, as before, for each of the percentages and averages given in the present report two figures have been calculated, one including and the other excluding the employers' contributions.

The information collected as to the composition of the total labour costs is shown in table I in the Appendix. The German statistics relate to each of the three principal coal districts, which together supplied 89 per cent. of the total production in 1931. The statistics for Great Britain cover about 96 per cent. of the British coal industry.

As stated above, the information relates in general to miners (manual workers) only. For Great Britain, however, the data also include a certain number of workers ("deputies" and others) covered by collective agreements; but the inclusion of these workers' wages makes so little difference to the general averages that the British figures may still be taken as comparable with those of other countries. The following table shows the relative importance of the different items in total labour costs in the various countries.

## RELATIVE IMPORTANCE OF DIFFERENT ITEMS IN TOTAL LABOUR COSTS IN 1931

Country and district	Workmen's insurance contribu- tions	Allow- ances in cash	Free and cheap coal	Other allow- ances in kind	Payment for holidays	Employers' insurance contribu- tions	All items other than money wages	Net money wages			
(a) Total labour costs excluding employers' contributions ~ 100											
Belgium Czechoslovakia France Germany :	3.0 7.0 6.2	2.5 2.8 3.3	3.8 7.3 2.0	 1.3 8.8	2.8 —		9.3 21.2 20.3	90.7 78.8 79.7			
Ruhr Saxony Upper Silesia Great Britain Netherlands	13.0 14.2 14.5 2.9 7 0	3.1 1.4 2.9  4.2	2.0 3.2 3.7 2.6 0.4	-1 -1 -1 1.4 1.3	$   \begin{array}{r}     3.3 \\     3.1 \\     2.7 \\     \\     2.3   \end{array} $		$\begin{array}{c} 21.4 \\ 21.9 \\ 23.8 \\ 6.9 \\ 15.2 \end{array}$	78.6 78.1 76.2 93.1 84.8			
Poland Saar	8.6 9.3	6.0 6.7	5.2 3.9	4.4 0.3	3.2 1.7	-	27.4 21.9	72.6 78.1			
Non-European countries :											
Canada Japan South Africa	2.2		1.4 0.5 —				1.4 13.3 —	98.6 86.7 —			
	(b) Total lab	our costs	including	employer	s' contribu	itions = 1	00				
Belgium Czechoslovakia France Germany : Ruhr Saxony Upper Silecic	2.9 6.3 5.7 11.1 11.9 12.2	2.3 2.5 3.1 2.7 1.2 2.4	3.6 6.6 1.9 1.7 2.7		$\begin{array}{c c} - \\ 2.5 \\ - \\ 2.9 \\ 2.6 \\ 2.3 \end{array}$	6.0 10.3 8.2 14.5 15.8 15.7	14.8 29.4 26.9 32.9 34.2 35.7	85.2 70.6 73.1 67.1 65.8 64.3			
Great Britain Netherlands Poland Saar	12.2 2.7 6.3 7.7 8.5	$ \begin{array}{c c}  & 2.4 \\  & \\  & 3.8 \\  & 5.3 \\  & 6.1 \\ \end{array} $	3.1 2.5 0.4 4.6 3.5	1.3 1.2 3.9 0.2	2.3  2.1 2.9 1.6	5.8 9.8 11.0 8.7	12.3 23.6 35.4 28.6	87.7 76.4 64.6 71.4			
Non-European countries : Canada Japan South Africa	2.0		1.3 0.5 —	9.9		4.4 6.7 —	5.7 19.1 —	94.3 80.9 —			

<sup>1</sup> Less than 0.1 per cent.

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These figures show that the relative importance of the various items other than money wages differs considerably as between one country and another. If employers' social insurance contributions are excluded, these items represent 6.9 per cent. of the total labour costs in Great Britain and 27.4 per cent. in Poland. If employers' contributions are included, these percentages become 12.3 and 35.4 respectively. The various items other than the money wages will now be examined separately.

Workers' social insurance contributions exceed one-tenth of the total labour costs in the three German coalfields; they vary between 5 and 10 per cent. in Czechoslovakia, France, the Netherlands, Poland, and the Saar, while in Belgium and Great Britain they are not more than 3 per cent. of the total.

Allowances in cash or family allowances are paid everywhere except in Great Britain. They form an appreciable proportion of the total labour costs in the Netherlands, Poland, and the Saar.

*Free or cheap coal* is supplied in all countries. It forms a relatively large proportion of the total in Czechoslovakia and Poland.

Other allowances in kind consist chiefly in free or cheap housing. These allowances are particularly high in France owing to the extent of workers' housing schemes in the Nord and Pas-de-Calais coalfields. In Belgium and Germany, however, they are almost nonexistent.

Payments for holidays generally form from 2 to 3 per cent. of the total. They do not exist in Belgium, France, and Great Britain.

*Employers' social insurance contributions* usually represent a higher percentage of the total than do workers' contributions, except in the Saar, where these percentages tend to be equal.

#### Distribution of the Total Labour Costs by Categories of Workers

The total labour costs of the mines have been calculated separately for each of the two main categories (underground and surface workers). In each case the totals including and excluding employers' insurance contributions are given separately. This distribution is shown in table II in the Appendix. It has not, however, been possible to distinguish between the two categories of workers for Belgium, or to give figures including employers' insurance contributions for these two categories separately for Czechoslovakia and the Netherlands. For the latter country, moreover, the distribution of the total amount, excluding employers' contributions, applies only to net money wages, workers' insurance contributions, and cash allowances, but not to "other items".

In general, the underground workers' proportion of the total labour costs varies from about 70 to 85 per cent., and that of surface workers from 15 to 30 per cent.

#### Number of Shifts and Days Worked

The total number of man-shifts and of days worked forms the basis for calculating the average labour costs and output per worker and for ascertaining the average number of workers. It is therefore important that these data should be compiled on uniform principles. The methods employed for that purpose having been fully described in the previous reports, it is unnecessary to recapitulate them here.

The two series of figures have been supplied by most of the countries covered by the enquiry, except that Belgium gives only the number of days worked and the Netherlands only the number of shifts worked. It would seem, however, that in neither of these countries is there any appreciable difference between the two figures; that is to say, hardly any overtime or extra shifts are worked there. It should also be observed that Great Britain records the number of shifts only, while the figures for days worked are estimates calculated from a comparison of the total number of shifts and the estimated number of extra shifts and weekends during the first quarter of the year.

All the data obtained are given in table III in the Appendix, separate figures being given in each case for shifts and days worked by underground and by surface workers respectively, except in the case of the estimated number of days worked in Great Britain, where this distinction is not made.

#### Number of Man-Shifts Lost

As on previous occasions, various information has been collected regarding the total number of man-shifts lost and their distribution according to cause. In particular, a distinction is drawn between two important groups : shifts lost when the mine was operating and shifts lost when the mine was idle. Separate figures are also given for the total number of shifts lost by underground and by surface workers. These data are used for calculating the average number of workers, in accordance with the uniform method adopted for the purpose.

The figures supplied by the different countries, except Belgium, are given in table IV in the Appendix. The Netherlands has indicated only the total number of shifts lost (surface and underground together).

#### Number of Workers Employed

The figures of the average number of workers employed in the coal mines are used to enable the average annual output and earnings per worker to be calculated. For the purpose of comparing the averages of one country with those of another, the number of workers must be determined by some uniform method. That generally adopted in the previous enquiries has again been followed; it consists in dividing the total number of shifts (days) worked and lost by the average number of working days in the year.<sup>1</sup> This method could be used for all the countries except Belgium, where data concerning shifts are not available, and Great Britain. The Belgian figures in table V are obtained by dividing the total number of days worked by the average number of days of operation of the mine; the British figures are quarterly averages of the number of workers on the colliery books (similar averages were used for the preceding enquiries).

## Production of Coal

The distribution of the total production of saleable coal — i.e. after elimination of waste by washing and screening — according to the different uses to which it is put is shown in table VI in the Appendix. This table shows the amount consumed by the mines themselves, the amount distributed to employees, and the amount of commercially disposable coal. The sum of these equals the tonnage extracted during the year, apart from stocks remaining on hand from the preceding year.

#### AVERAGE LABOUR COST AND OUTPUT IN COAL MINES

### Average Labour Cost per Worker

From the basic date given in table II (total labour costs), table III (number of shifts and days worked), and table V (average number of workers), the average labour costs per shift, per day, and per year have been calculated. Further, on the basis of the labour cost per shift and the figures relating to hours worked, the average labour cost per hour has been calculated. All these averages have been calculated separately for underground and for surface workers, and in each case including and excluding employers' social insurance contributions. The figures for the average labour cost per hour are based on average time of presence in the mine for underground workers and on average actual hours of work for surface workers.  $^2$ 

The table on page 378 gives the results of these calculations. In cases where the basic data were incomplete, certain adjustments had to be made where this was possible. Thus, for the Netherlands, where the distribution of the total labour costs does not apply to the whole of the total given elsewhere, it has been assumed that the proportional distribution of the unknown items is the same for underground and for

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<sup>&</sup>lt;sup>1</sup> This number was as follows: Czechoslovakia, 310; France, 305; Germany: Ruhr, 303.8, Saxony, 303, Upper Silesia, 300; Netherlands, 305; Poland, 300; Saar, 302.04.

<sup>&</sup>lt;sup>2</sup> The figures taken for hours of work in the various countries are as follows:

<sup>(</sup>a) Underground workers: Czechoslovakia, 7 h. 28'; France, 7 h. 52'; Germany: Ruhr, Saxony, and Upper Silesia, 8 h.; Great Britain, 8 h.; Netherlands, 8 h. 10'; Saar, 7 h. 30'.

<sup>(</sup>b) Surface workers : Belgium, 8 h.; Czechoslovakia, 7 h. 45'; France, 8 h.; Germany : Ruhr, 8 h. 30', Saxony, 9 h., Upper Silesia, 8 h. 45'; Great Britain, 7 h. 45'; Netherlands, 8 h.; Poland, 8 h.

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## AVERAGE LABOUR COSTS IN NATIONAL CURRENCY, PER SHIFT, PER DAY, PER HOUR, AND PER YEAR, IN 1931

<u> </u>											
Country and district	Cur- contributions			insurance	Including employers' insurance contributions						
Country and district	unit	Under- ground workers	Surface workers	All workers	Under- ground workers	Surface workers	All workers				
	(a) Per man-shift										
Belgium	Fr.										
France	KĊ. Fr.	53.16 43.90	39.67 31.67	49.77 40.12	59.27 47.88	44.24 34.40	55.49 43.72				
Germany : Ruhr	RM.	9.17	7.40	8.79	10.72	8.72	10.30				
Saxony Unper Silesia	,,	7.74	6.95	7.55	9.19	8.27	8.97				
Great Britain	s."d.	10 07/8	7 4 1/4	9 5 %	10 81/8	$7 \frac{10^{1}}{3}$	10 0 %				
Netherlands Poland	F1. Zl.	5.92 11.33	4.55 9.46	5.51 10.70	6.57 12.74	5.04 10.64	6.11 12.04				
Saar	Fr.	50.28	45.48	48.89	55.08	49.68	53.52				
Non-European countries : Canada Japan	<b>\$</b> Yen	<u> </u>	1.16	$5.36 \\ 1.52$	 1.83	1.21	5.60 1.63				
South Africa	s. d.			1 .8 <sup>1</sup> /8							
		(b) I	Per worker p	er day		·					
Belgium	Fr.	F2 00		46.98	60.12	47.08	50.02				
Germany :	кс. Fr.	53.92 43.97	42.22 31.99	40.30	47.97	47.08 34.76	43.91				
Ruhr	RM.	9.30 7.91	7.75	8.98 7 77	10.87	9.13 8.69	10.51 9.23				
Upper Silesia	,, ,,,	7.19	6.21	6.95	8.51	7.40	8.24				
Netherlands	s. a. Fl.	Ξ	—	9 9% 	_						
Poland Saar	ZI. Fr.	$11.59 \\ 50.65$	10.12 48.29	11.11 50.00	13.03 55.48	11.39 52.76	12.49 54.73				
	·	(c) P	er worker p	er hour		·	·				
Belgium	Fr.			_			—				
Czechoslovakia France	KČ. Fr.	7.12	5.12 3.96		7.94	5.71					
Germany :	BM	1 15	0.87		1.94	1.02					
Saxony	,,,	0.97	0.77	_	1.54	0.92	=				
Upper Silesia Great Britain	s. d.	0.89 1 3 <sup>1</sup> /s	0 111/2		1.05	0.81 1 0 <sup>5</sup> /n	=				
Netherlands Poland	F1.	0.72	1 18		0.80	1 33	_				
Saar	Fr.	6.70	-	-	7.34		=				
	•	(d) I	Per worker p	er year	·	·	·				
Belgium	Fr.			_	_						
Czechoslovakia France Gormany	KČ. Fr.	11,942 10,984	10,709 8,550	11,673 10,272	13,315 11,982	11,941 9,289	13,015 11,194				
Ruhr	RM.	2,190	1,957	2,145	2,560	2,307	2,511				
Saxony Upper Silesia		1,921 1,707	1,873 1,561	1,911 1,673	2,281 2,023	2,228 1,861	2,269				
Great Britain Netherlands	£ ś. d. FI	118 10 0	100 8 234	114 19 8	125 12 6	107 7 6 1/4	122 1 6				
Poland	zi.	2,815	2,570	2,738	3,166	2,890	3,079				
Saar	Fr.	11,880	12,242	11,975	13,014	13,374	13,108				
Non-European countries :							1 094				
Japan	Yen	397	355	386	429	371	413				
South Africa	£ s. d.	-	-	26 1 10 34	_		-				

surface workers. The averages arrived at on the basis of the figures given have been increased by a fraction corresponding to the difference between these figures and the total actual labour costs for all the workers. A similar estimate has been made for the division of employers' social insurance contributions in Czechoslovakia.

#### Average Output of Coal

From the information relating to the total production of coal, the number of shifts and days worked, and the number of workers, the average output per man-shift, per worker per day, and per worker per year has been calculated.

These figures are of great interest, as they clearly indicate the differences in natural conditions and in the efficiency of labour in the various countries. These differences have a perceptible influence on the contribution of labour to the total costs of production; they are also to a certain extent reflected in the average labour cost per ton, as will be seen later. Indeed, the countries and coalfields where the average output is very high are usually those where the labour cost per unit of production is lowest, and *vice versa*.

AVERAGE OUTPUT OF COAL PER MAN-SHIFT, PER WORKER PER DAY, AND PER WORKER PER YEAR IN 1931

	Per ma	n-shift	Per worke	er per day	Per worke	r per year
Country and district	Under- ground workers	All workers	Under- ground workers	All workers	Under- ground workers	All workers
Belgium	_		0.853	0.592		
Czechoslovakia	1.372	1.028	1.392	1.055	308	241
France	1.043	0.721	1.045	0.724	261	185
Germany : Ruhr Saxony Upper Silesia Great Britain Netherlands Poland Saar	1.888 0.992 2.103 1.406 1.760 2.059 1.178	1.487 0.758 1.579 1.098 1.232 1.367 0.838	1.914 1.014 2.135  2.105 1.186	$1.518 \\ 0.779 \\ 1.613 \\ 1.138 \\ \\ 1.419 \\ 0.857$	451 246 507 331 480 512 278	363 196 389 266 336 350 205
Non-European countries :						
Canada	3.225	2.373		-	561	438
India	· —	_			186	135
Japan	1.068	0.714			250	181
South Africa		1.540	-	-	_	479

(In metric tons)

These figures show clearly the differences in average output between the various countries or coalfields, which are primarily due to differences in natural conditions, but are also dependent, to an extent which cannot be determined here, on the productive capacity of the individual workers and undertakings. Lastly, the length of working hours underground also tends to affect the average output of underground workers.

## Average Labour Cost per Metric Ton

In addition to the average labour cost and output of coal per shift and per worker, the data given in tables I and VI in the Appendix enable the average labour cost per ton of coal (i.e. per unit of production) to be calculated.

Separate averages have been calculated for "saleable coal" and for "commercially disposable coal" as defined above. The figures arrived at are given in the table below. As usual, a distinction has been drawn in each case between the labour costs excluding and including employers' insurance contributions.

	Cur-	Excluding insurance of	employers' contributions	Including employers' insurance contributions		
Country and district	unit	Saleable coal	Commercially disposable coal	Saleable coal	Commercially disposable coal	
Belgium	Fr.	79.42	90.08	84.56	95.91	
Czechoslovakia	Kč.	48.43	52.61	54.00	58.66	
France	Fr.	55.64	63.15	60.63	68.82	
Germany : Ruhr Upper Silesia Great Britain Netherlands Poland Saar	R.M. " s. d. Fl. Zl. Fr.	$5.914.318 7\frac{1}{2}4.477.8358.35$	6.47 4.54 9 4½ 4.67 8.66 66.30	6.92 5.11 9 2 4.96 8.81 63.87	$7.58 \\ 5.38 \\ 9 11 \frac{1}{2} \\ 5.18 \\ 9.74 \\ 72.58 $	
Non-European countries :						
Canada	\$	2.26	2.44	2.36	2.55	
Japan	Yen	2.13	2.34	2.28	2.51	
South Africa	s. d.	11	1 1 1 1/2 1	-	-	

AVERAGE LABOUR COST PER METRIC TON OF COAL IN 1931

<sup>1</sup> Average labour cost per ton of coal sold.

The figures in the previous tables are obviously not comparable with one another, as they are expressed in the currency of the country to which they belong. In order to render them mutually comparable it would be desirable to reduce them to a common measure. It has been decided, however, not to make any comparison, either in terms of purchasing power, or in terms of a common currency, of average daily or annual earnings in the different countries. A comparison of purchasing power would at the moment be inopportune, as the Office has not yet completed its study of new methods of international comparisons of costs of living; and the comparison in terms of a common currency is not considered worth while, as being of relatively limited interest and in view of the special difficulties caused by the monetary disturbances of 1931.

## Average Labour Costs per Metric Ton, expressed in a Common Currency

On the other hand, the comparison of labour costs per unit of production reduced to a common currency is of considerable interest. From the point of view of international commerce, it would appear useful to know the labour costs per metric ton expressed in a common currency, and also the relative level of these costs in the different countries.

These figures have therefore been calculated in Swiss francs<sup>1</sup>, and the results are shown in the table on page 382, together with index numbers calculated with the average labour costs in the Ruhr as base.

For Great Britain, whose departure from the gold standard towards the end of September 1931 had no immediate effect either on wages or on production, two figures are given; one refers to the first three quarters of the year and the other to the last quarter. The two are based on the same annual average, but the rate used for conversion into Swiss frances is in the first case the average value of sterling during the months January to September, and in the second its average value during October, November, and December. It was this sudden change, too, which made it seem advisable to choose another country as base for the calculation of the index numbers.

It seems desirable to recall the fact that these figures do not represent the price of coal on the international market, owing to the absence

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The rates of exchange use	d were as foll	lows:
		Swiss franc3
Belgium :	Frs. 100	== 14.49
Czechoslovakia :	Kč. 100	= 15.27
France and the Saar :	Frs. 100	= 20.19
Germany :	<b>RM.</b> 100	= 122.33
Great Britain :	£1	$= \begin{cases} 24.93 \text{ (JanSept. 1931} \\ 18.75 \text{ (OctDec. 1931)} \end{cases}$
Netherlands :	Fl. 100	= 207.66
Poland :	Zl. 100	= 57.74
Canada :	\$1	<b>= 4.96</b>
Japan :	1 yen	= 2.52
South Africa :	£1	= 24.9

of any information as to costs of production other than labour. In all cases, however, the labour item constitutes the heaviest part of the cost price of coal at the pithead.

Country and district	Excluding em cont	ployers' insurance ributions	Including employers' insurance contributions		
	Salcable coal	Saleable Commercially Saleabl coal disposable coal coal		Commercially disposable coal	
	(a) In a comr	non currency (Sw	iss francs)		
Belgium	11.51	13.05	12.25	13.90	
Czechoslovakia	7.40	8.03	8.25	8.96	
France	11.23	12.75	12.24	13.89	
Germany :					
Ruhr	7.23	7.91	8.47	9.27	
<sup>'</sup> Upper Silesia	5.27	5.55	6.25	6.58	
Croot Dritoin 1	10.76	11.68	11.42	12.40	
Great Billain -	8.09	8.79	8.59	9.33	
Netherlands	9.28	9.70	10.30	10.76	
Poland	4.52	5.00	5.09	5.62	
Saar	11.78	13.40	12.90	14.65	
Non-European coun- tries : Canada Japan	11.22 5.36	12.11 5.89	11.72 5.74	$\begin{array}{c} 12.66\\ 6.32\end{array}$	
South Africa	1.35				
	(b) Index nun	nbers (Ruhr = 1	.00)		
Belgium	159	165	145	150	
Czechoslovakia	102	102	97	97	
France	155	161	145	150	
Germany :	100		100	100	
Runr Llanas Silasia	100	100	100	100	
Opper Silesia	1 73	148	195	124	
Great Britain <sup>1</sup>	149	140	105	104	
Nothonlanda	( 112   190	102	- 199	116	
Polond	62	69	60	61	
Soor	169	160	152	158	
	100	107			
Non-European coun- tries :					
Canada ·	155	153	138	137	
Japan	74	74	68	08	
South Africa	19		_		
	L i	1 , _		1	

## AVERAGE LABOUR COST PER METRIC TON OF COAL IN 1931, EXPRESSED IN A COMMON CURRENCY, AND INDEX NUMBERS

= <sup>1</sup> The first figure in each case is based on the average rate of exchange for January-September 1931 (£1 = 24.93 Swiss francs), the second on the average rate for October-December (£1 = 18.75 Swiss francs).

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## APPENDIX

## TABLE I. COMPOSITION OF TOTAL LABOUR COSTS IN 1981

Country and district			Workers' insurance contribu-	Allowances			
	Cur- rency unit	Net money wages			In kind		
			uons	in cash	Free and cheap coal	Other	
Belgium 1	Fr.	1,948,111	65,330	52,728	81,531		
Czechoslovakia	Kč.	499,803	44,629	17,672	46,304	8,338	
France	Fr.	2,262,322	176,207	95,054	57,515	249,000	
Germany :							
Ruhr	RM.	397,770	65,688	15,897	10,003	1	
Saxony	,,	24,496	4,441	442	1,012		
Upper Silesia	,,	55,122	10,456	2,085	2,680	1	
Great Britain	£	86,811	2,664		2,454	1,334	
Netherlands	Fl.	48,918	4,006	2,431	240	. 772	
Poland	Zl.	217,106	25,759	17,950	15,512	. 13,038	
Saar		518,112	61,865	44,574	25,713	1,647	
Non-European coun- tries :				•			
Canada	\$	25,822	_		375	-	
Japan	Yen	51,605	· . 1,294	·	.295	6,330	
South Africa <sup>2</sup>	£	593	-	_	· · ·	_	
					! <u> </u>		

(National currency, in thousands)

Country and district	Cur- rency unit	Payments for holidays	Total actual earn- ings (excluding em- ployers' insurance contributions)	Employers' insur- ance contributions	Total labour costs (including employ- ers' insurance contributions)
Belgium ' Czechoslovakia	Fr. Kč.	17,887	2,147,700 634,633	138,894 72,966	2,286,594 707,599
France Germany :	Fr.		2,840,098	. 255,007	3,095,105
Ruhr	RM.	16,927	506,286	86,405	592,691
Saxony	,,	974	31,365	5,890	37,255
Upper Silesia	,,	1,961	72,305	13,486	85,791
Great Britain	£		93,263	5,752	99,015
Netherlands	Fl.	1,337	57,704	6,298	64,002
Poland	Z1.	9,683	299,048	37,274	336,322 ·
Saar	Fr.	11,330	663,241	62,753	725,994
Non-European coun- tries :	:				
Canada	\$		26,197	1,200	27,397
Japan	Yen	_	59,524	4,299	63,823
South Africa <sup>2</sup>	£	—	593	<u> </u>	593

<sup>1</sup> A sum of Frs. 20,910,700 (subsidies to workers' welfare institutions) is not included in the total labour costs.

\* Wages paid to coloured workers, who alone do mining work proper.

Country and district	Cur-	Excluding	employers' contribution	' insurance s	Including employers' insurance contributions			
	unit	Under- ground	Above ground	Total	Under- ground	Above ground	Total	
Belgium	Fr.			2,147,700		_	2,286,594	
Czechoslovakia	Kč.	507.594	127.039	634.633	—		707.599	
France	Fr.	2.148.400	691.698	2.840.098	2.343.622	751.483	3.095.105	
Germany :		, .,	<b>,</b>		1			
Ruhr	RM.	415,948	90,339	506,287	486,212	106,479	592,691	
Saxony	l	24,539	6,826	31,365	29,133	8,122	37,255	
Upper Silesia		56,505	15,800	72,305	66,956	18,835	85,791	
Great Britain	£	77,418	15,845	93,263	82,071	16,944	99,015	
Netherlands	FI.	41,6031	13,752	55,355	1 <u> </u>	· ·	64,002	
Poland	Zl.	210,149	88,899	299,048	236,342	99,980	336,322	
Saar	Fr.	485,295	177,947	663,242	531,590	194,404	725,994	
Non-European coun- tries :				0.105			07.007	
	Non Ver		15.950	26,197		15 500	27,397	
South Africa	ren	44,448	15,876	59,524	48,054	15,709	03,823	
South Airica	, ž			593		_	299	

## TABLE II. DISTRIBUTION OF TOTAL LABOUR COSTS AMONG DIFFERENT CATEGORIES OF WORKERS IN 1931

## (National currency, in thousands)

<sup>1</sup> Net money wages, workers' insurance contributions, and cash allowances, excluding other items.

## TABLE III. TOTAL NUMBER OF SHIFTS AND OF DAYS WORKED IN 1931

#### (In thousands)

		Shifts worked		Days worked			
Country and district	By under- ground workers	By surface workers	By all workers	By under- ground workers	By surface workers	By all workers	
Belgium Czechoslovakia France	 9,549 48,944	 3,202 21,843	 12,751 70.787	31,710 9,413 48.861	14,007 3,009 21,620	$\begin{array}{r} 45,717 \\ 12,422 \\ 70.481 \end{array}$	
Germany :	A5 955	19 914	57 560	44 790	11 669	56 391	
Saxony	3,170	982	4,152	3,103	985	4,038	
Great Britain	7,983 153,713	2,649 43,108	10,632	7,864	2,544	189,971	
Netherlands ' Poland	7,332 18,546	3,138 9,395	10,470 27,941	18,136	8,781	26,917	
Saar	9,652	3,913	13,565	9,581 	3,685		
Non-European countries :							
Canada <sup>1</sup> Japan <sup>1</sup>	3,600 26 211	1,292 12.985	4,892 39 196	-	_	_	
South Africa			7,067		—		

' The number of days worked is practically the same as that of shifts worked.

		(	-,		
		Shifts lost	By categories of workers		
Country and district	When the mine was working, owing to voluntary and involuntary absence	When the mine was not working	Total	Underground	Surface
Belgium	_				
Czechoslovakia	1,434	2,998	4,432	3,764	668
France	6,098	7,457	13,555	10,724	2,831
Germany :	-				
Ruhr	5,952	9,379	15,331	12,969	2,362
Saxony	544	378	922	766	156
Upper Silesia	1,150	1,413	2,563	2,070	493
Great Britain	13,156	50,551	63,707	52,124	11,583
Netherlands	1,154	78	1,232		
Poland	2,531	3,325	5,856	4,258	1,598
Saar	1,113	2,349	3,462	2,679	783
Non-European coun- tries :					
Canada	30	1,900	1,930		_
South Africa	_		1,058		

#### TABLE IV. TOTAL NUMBER OF SHIFTS LOST IN 1931, CLASSIFIED BY CAUSES

## (In thousands)

#### TABLE V. AVERAGE NUMBER OF WORKERS, BY CATEGORIES, IN 1931

Country and district	Underground workers	Surface workers	Underground and surface workers	
Belgium <sup>1</sup>	106,410	46,303	152,713	
Czechoslovakia	42,505	11,863	54,368	
France	195,600	80,900	276,500	
Germany:				
Ruhr	189,910	46,160	236,070	
Saxony	12,772	3,645	16,417	
Upper Silesia	33,100	10,122	43,222	
Great Britain <sup>2</sup>	653,300	157,800	811,100	
Netherlands	26,857	11,510	38,367	
Poland	74,646	34,594	109,240	
Saar	40,849	14,536	55,385	
Non-European countries :				
Canada	20,701	5,788	26,489	
India	112,134	42,023	154,157	
Japan	111,902	42,496	154,398	
South Africa		<i>_</i>	22,725	

The method of computing the average number of workers is different from that used by the Office. The Belgian method consists in dividing the number of man-days worked by the number of days in the year on which the mine was in operation.
 The figures are quarterly averages of the number of workers on the colliery books.

Country and district	Saleable coal	Coal consumed by the mine	Coal distributed to the workers	Commercially disposable coal	
Belgium	27.042	2.668	532	23.842	
Czechoslovakia	13,103	811	229	12.063	
France	51.046	4,793	1.278	44.975	
Germany :			-,	22,010	
Ruhr	85,628	6.334	1.091	78.203	
Saxony	3,146	817	61	2.268	
Upper Silesia	16,792	612	240	15,940	
Great Britain	216,113	12,417	4,659	199,037	
Netherlands	12,901	462	73	12,366	
Poland	38,183	2,994	642	34,547	
Saar	11,367	1,020	344	10,003	
Non-European countries:					
Canada	11,609	718	153	10,738	
India	20,844	1,242 1		19,602	
Japan	27,987	2,389	181	25,417	
South Africa	10,881	· · ·	-	10,559 <sup>2</sup>	

TABLE VI. TOTAL PRODUCTION OF COAL IN CERTAIN COUNTRIES IN 1931 (In thousands of metric tons)

<sup>1</sup> Including coal distributed to the workers.

<sup>1</sup> Tonnage sold.

## PART II: HOURS OF WORK IN COAL MINES IN 1931

It has not been thought necessary to describe again in detail the method adopted for the enquiry into hours of work, the earlier studies having given sufficient indications on this point. It will therefore suffice to analyse the information collected.<sup>1</sup>

The Office received replies from the following countries : Belgium, Canada, Czechoslovakia, France, Germany, Great Britain, India, Japan, the Netherlands, Poland, and the Saar. As the information concerning non-European countries is not comparable with that for European countries, it is shown separately, as in previous enquiries.

### **EUROPEAN COUNTRIES**

Belgium and Czechoslovakia stated that no change of any importance had taken place since 1929, so that the data supplied for the earlier enquiry still hold good. The Netherlands, Poland, and the

<sup>&</sup>lt;sup>1</sup> It may be pointed out that in this enquiry, as in the former ones, the aim has been to determine only the following quantities, per day and per week: for underground workers, the regulation hours of work, the individual time spent in the mine, and the length of time spent at the face, less breaks; and for surface workers, the regulation hours of work and the actual hours of work (i.e. the regulation hours less breaks, if any). These data are not in themselves a sufficient basis for conclusions as to the average total number of hours worked per year and per worker; this figure depends also on the total number of shifts or of days worked during the year and on the average number of workers employed, information on both of which points is given in the first part of this article (see above, pages 376 and 384-385.

		Regulation ho	ours of w	/ork	Individual time spent in the mine		Length of time spent at face, less breaks	
Country and district		Day or shift	Week		Den er skift	Week	D	
:	Legis- lation	Collective agreements or arbitration awards	Legis- lation	Collective agreements or arbitration awards	Day or sint	week	Day or sum	Week
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Belgium	8 h.	_	48 h.	—	8 h.	48 h.	6 h. 20'	38 h.
Czechoslovakia 1	8 h.	8 h.	48 h.	46 h. + 2 h. <sup>1</sup>	7 h. 28′	44 h. 48′	5 h. 36′ ² 5 h. 52′ ³	33 h. 36′ ² 35 h. 12′ ³
France	8 h.	· · ·	—	—	7 h. 52′	47 h. 12′	6 h. 36′ <sup>6</sup>	39 h. 36′ <sup>6</sup>
Germany Ruhr Aachen Upper Silesia Lower Silesia Saxony	8 h. 8 h. 8 h. <sup>6</sup> 8 h. <sup>6</sup> 8 h.	7 h. + 1 h. 8 h. ${}^{5}$ 7 h. 30' + 30' ${}^{7}$ 7 h. + 1. h. ${}^{8}$ 8 h. ${}^{9}$	48 h. 48 h. 48 h. 48 h. 48 h.		4   	4   		4 
Great Britain 10	7h.30′	·	—	—	8 h.	43 h. 50′ 11	6 h. 15′ 12	34 h. 5′ 13
Netherlands	8 h.	8 h.		46 h.	8 h. 10′ 6 h. 10′ (Sat.)	47 h.	6 h. 10' 4 h. 10' (Sat.)	35 h.
Poland : Upper Silesia Dombrowa and Cracow coalfields	8 h. 8 h. 6 h. (Sat.)	8 h. —		-	8 h. 2' 8 h. 30' <sup>14</sup> 6 h. 30' (Sat.)	48 h. 12′ 49 h.	6 h. 18' 6 h. 16' 4 h. 26' (Sat.)	37 h. 48′ 35 h. 46′
Saar	8 h.	7 h. 30′	48 h.		7 h. 30′	_	6 h. 15′	·· .

## TABLE I. HOURS OF WORK OF UNDERGROUND WORKERS IN $1931\ _{\text{\tiny o}}$

For notes to the table, cf. pages 388-389.

Saar communicated the same figures as in 1929. France and Germany supplied certain figures which are different from those given in 1929, but in the case of France these differences are due rather to the method of calculation than to any essential change in the facts, and are in any case insignificant.

All the information received is brought together in tables I and II, which show the hours of work of underground and surface workers in hard-coal mines in 1981.

#### Hours of Work of Underground Workers

Table I shows :

(1) the regulation hours of work fixed either by legislation, or by collective agreements or arbitration awards;

(2) the individual time spent in the mine (the period between the time when the worker enters the cage for the descent and the time when he leaves it after the ascent);

(3) the time spent at the face less breaks (the actual individual time spent in the mine, less the total travelling time underground and breaks, the latter not including any other lost time or waiting periods).

The individual time spent in the mine and the time spent at the face less breaks have been determined in the same way as in the enquiries of 1927 and 1929. Readers may be reminded of the reserves made in the earlier enquiries as to the value of the figures showing the time spent at the face less breaks. The figures used for calculating this time, namely, the total travelling time and the duration of breaks, cannot be determined with absolute accuracy. They are generally approximate figures and must be accepted with caution; their value naturally influences the value of the figures showing the time spent at the face less breaks.

#### NOTES TO TABLE I

#### Czechoslovakia.

<sup>1</sup> The hours of work fixed by collective agreement are 46 in the week, with a permanent undertaking on the part of the workers to work 2 additional hours on Saturday (i.e. 48 hours in all) in return for special overtime pay.

<sup>2</sup> The time for the return journey underground includes an average waiting period of 16 minutes at the pit bottom.

<sup>3</sup> Figures calculated by the Office method, in which the average waiting period of 16 minutes at the pit bottom has not been taken into consideration.

#### Germany.

<sup>4</sup> As in the previous enquiries, the German Government has no official data relating to the average winding time, travelling time underground, and breaks, and it therefore indicates neither the individual time spent in the mine nor the average time spent at the face less breaks.

<sup>5</sup> According to the district collective agreement.

<sup>6</sup> In accordance with the Hours of Work Order of 14 April 1927, the working day is equal to the length of the shift and is calculated from the departure of the cage for the descent until its departure for the ascent. <sup>7</sup> In accordance with the arbitration award of 20 March 1929 concerning the standard collective agreement of 26 March 1928 and with the agreement of 20 March 1929 on additional work, the length of the shift, since 1 April 1929, has been 7 hours 30 minutes, calculated for each worker from the time of entering the cage to descend until the time of leaving it after ascending, *plus* 30 minutes of additional work. These hours were upheld by the arbitration award of 13 January 1931 concerning the standard collective agreement of 26 March 1928 and the agreement on additional work of 20 March 1929.

<sup>8</sup> In accordance with the collective agreement of 9 December 1929, the length of the shift, since 1 December 1929, has been 7 hours, calculated for each worker from the time of entering the cage to descend until the time of leaving it after ascending; nevertheless, under the arbitration award of 28 May 1927 concerning additional work, which has been in force since 1 June 1927 in spite of the collective agreements, the length of the shift is calculated from the beginning of the descent until the beginning of the ascent and is 7 hours *plus* 1 hour of additional work.

<sup>9</sup> Calculated from the time when the worker enters the cage to descend until the time when he leaves it after ascending.

#### Great Britain.

<sup>10</sup> The particulars relate to a full week (Monday to Saturday) and are averages for the men employed on the various shifts. They relate to the hours in force in the latter months of 1931, and do not represent an average of the hours in operation at different times during that year.

<sup>11</sup> This figure represents 8 hours bank to bank per day from Monday to Friday, *plus* the average time spent below ground on Saturday based on special returns furnished to the Mining Association of Great Britain. Weekly hours bank to bank are lowest in Durham (41 hours 15 minutes) and highest in Somerset (46 hours 40 minutes), the next lowest and highest being in Northumberland (41 hours 30 minutes) and Lancashire and Cheshire (45 hours 30 minutes).

<sup>12</sup> This figure is obtained by deducting from the individual time spent in the mine a total of 1 hour 45 minutes for travelling time underground and breaks. This is the same allowance as was adopted for the 1925, 1927, and 1929 enquiries, and for the purpose of the Royal Commission on the Coal Industry (1925) (see section 4 of the Appendix to Vol. I of the Report). The Commission found that the total of travelling time underground, breaks for meals, and other unproductive time underground must be assumed to have remained constant since 1905. (This assumption was contested by the Miners' Federation of Great Britain, which considered that the deduction of 1 hour 45 minutes for the total of travelling time underground, breaks for meals, and other unproductive time underground from the individual time spent in the mine in order to obtain the time spent at the face had been underestimated.) As the hewers in Northumberland and Durham and other classes of workers in various districts do not work every Saturday, the average time so spent on Saturday is reduced to 1 hour.

<sup>13</sup> Weekly hours at the face are lowest in Durham (30 hours 15 minutes) and highest in Somerset (37 hours 30 minutes), the next lowest and highest being Northumberland (31 hours 30 minutes) and Lancashire and Cheshire (36 hours 45 minutes).

#### Poland.

<sup>14</sup> This figures includes a statutory break of 30 minutes, introduced by the Mines Department on 6 April 1926.

#### Hours of Work of Surface Workers

As in previous enquiries, the figures in table II refer (a) to the regulation daily and weekly hours of work, and (b) to the actual hours of work, i.e. the regulation hours less breaks, if any.

		Regulation	hours of	Actual hours of work		
Country and district		Day or shift	Week		-	Week
	Legis- lation	Collective agreements or arbitration awards	Legis- Collective agreements lation or arbitration awards		Day	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Belgium	8 h.	_	48 h.	_	8 h.	48 h.
Czechoslovakia	8 h.	8 h.	48 h.	48 h.	7 h. 45'	46 h. 30'
France	8 h.				8 h.	48 h.
Germany : Ruhr Aachen Upper Silesia Lower Silesia Saxony Great Britain <sup>10</sup>	8 h. 8 h. 8 h. <sup>3</sup> 8 h. <sup>3</sup> 8 h.	8-9 h. 8-10 h. <sup>2</sup> 8, 9, 9 h. 30' and 10 h. <sup>4</sup> 8, 9 and 9 h. 30' <sup>7</sup> 8-10 h.	48 h. 48 h. 48 h. 48 h. 48 h. 48 h.		8-9 h. 	48-54 h. <sup>1</sup> 
Netherlands	_	8 h.	_	48 h.	11	11
Poland : Upper Silesia Dombrowa and Cracow coalfields Saar : (a) Workers whose work	8 h. 8 h. 6 h. (Sat.)	8 h.		48 h. —	8 h. 8 h. (6 h. Saturday)	48 h. 46 h.
is closely connected with extraction (b) Other surface workers	8 h. 8 h.	8 h. 8 h.	48 h. 48 h.		7 h. 30' 8 h.	-

#### TABLE II. HOURS OF WORK OF SURFACE WORKERS IN 1931

#### Germany.

- <sup>1</sup> Excluding Sunday work.
- <sup>2</sup> According to the district collective agreement.

<sup>3</sup> In accordance with sections 1 and 2 of the Hours of Work Order of 14 April 1927, hours of work may not exceed 8 in the day, excluding breaks. For branches of industry in which work consists largely in mere presence on duty, collective agreements determine hours differently. In accordance with the Order of 20 January 1925, the hours of workers employed in undertakings with coke ovens may not exceed 8 in the day.

<sup>4</sup> Since the arbitration award of 20 March 1929 came into force (1 April 1929), hours of work have been as follows :

- (a) Workers employed at coke ovens : 8 hours (in accordance with the Order of 20 January 1925).
- (c) Workers in other continuous-process undertakings: since 1 April 1929 (in accordance with the agreement of 20 March 1929 on additional work),  $9\frac{1}{2}$  hours, including breaks of  $1\frac{1}{2}$  hours in all. The hours of boiler firemen are those given under (d).
- (d) Other surface workers : since 1 April 1929 (in accordance with the agreement of 20 March 1929 on additional work), 9 hours from Monday to Friday and 8 hours on Saturday, excluding breaks, which usually amount to half-an-hour and in no case to more than one hour.
- (e) Workers whose work consists largely in presence on duty; since 1 April 1929, 10 hours' occupation *plus* 2 hours' presence, including breaks.

The above hours have been upheld by the arbitration award of 13 January 1931 concerning the standard collective agreement of 26 March 1928 and the agreement on additional work of 20 March 1929.

<sup>5</sup> In accordance with the standard collective agreement, when the working day is 8 hours, the working week is 48 hours, or 56 in continuous-process undertakings. The arbitration awards relating to the agreement on additional work do not deal specially with the working week, which varies between 48 and 60 hours.

<sup>6</sup> Surface operations are so various and breaks are treated in such different ways (they are fixed by agreement between the management and the workers' representatives for the undertaking and are sometimes included in the total number of hours and sometimes excluded) that it is impossible to give precise information on the average duration of actual work. The information supplied indicates that at the end of 1931 daily hours varied between  $7\frac{1}{2}$  and 10 and weekly hours between 45 and 60.

<sup>7</sup> Since the arbitration award of 28 May 1927 concerning additional work cameinto force (on 1 June 1927), hours of work have been as follows :

- (a) Workers employed at coke ovens : 8 hours (in accordance with the Order of 20 January 1925).
- (b) Workers employed on coal extraction proper: 8 hours, *plus* one hour of additional work daily except on Saturdays.
- (c) Boiler firemen, briquette workers, solderers, and similar groups : 8 hours.
- (d) Workers employed on other continuous processes 9½ hours from Monday to Friday, 8 hours on Saturday.
- (e) Other surface workers: 9 hours from Monday to Friday and 8 hours on Saturday, excluding breaks, which do not exceed one hour in all.
  - <sup>3</sup> Weekly hours of work are not specifically, fixed in the collective agreements

or in the arbitration award concerning additional work, but in view of the 8-hour Saturday they may be estimated at between 48 and  $55\frac{1}{2}$ .

<sup>9</sup> Cf. note <sup>6</sup>. The information supplied indicates that at the end of 1931 the hours of actual work lay between 8 and  $9\frac{1}{2}$  a day and between 48 and  $55\frac{1}{2}$  a week.

#### Great Britain.

<sup>10</sup> These data relate only to men engaged in manipulating coal. Owing to the absence of information as to the numbers of such workers in the various districts, and to the inclusion of mealtimes in some districts and their exclusion in others, it is not possible to calculate an average for the whole country.

#### Netherlands.

<sup>11</sup> The actual hours of work cannot be determined. For certain categories of surface workers there are regulations concerning breaks which vary considerably, so that it is impossible to calculate the average to be deducted from the regulation hours of work.

These tables are sufficiently self-explanatory to require no comment. It will suffice to point out the few and unimportant changes that have taken place between 1929, the date of the last enquiry, and 1931.

For underground workers, the regulation hours of work have remained unchanged except in the German district of Aachen and in Great Britain. In the Aachen district the length of the individual shift has been reduced by a quarter of an hour to 8 hours. In Great Britain the scheme put into force under the Act of 8 July 1926 (amended by that of 1 April 1930), which fixed the average working day at  $7\frac{1}{2}$  hours with a fortnightly spreadover, ceased to operate on 8 July 1931. On that date a new scheme providing for a  $7\frac{1}{2}$ -hour day without spreadover came into force for one year.

In the Netherlands the Decree of 21 March 1930, amending the General Mining Regulations of 1906, brought legislation into line with current practice by fixing a day of 8 hours instead of  $8\frac{1}{2}$  hours for the time spent in the mine.

In Great Britain the time spent in the mine and the time spent at the face less breaks have been considerably reduced (the latter by 19 minutes a day and 3 hours a week on an average), as a result of the statutory reduction of the length of the shift in 1930. The slight increase in France (one minute a day and 6 minutes a week) in the time spent at the face less breaks results from a slight change in the method of calculation.

For surface workers there have been changes in Germany and Great Britain only. In German Upper Silesia minimum hours of actual work are  $7\frac{1}{2}$  in the day and 45 in the week for certain categories of workers, as against 8 and 48 hours respectively in 1929. In Great Britain the hours fixed by collective agreements and the hours of actual work have been reduced by about 20 minutes a day and  $1\frac{1}{2}$ -2 hours a week as a result of the statutory reduction of hours for underground workers.

To sum up, with the exception of Great Britain, hours of work in European mines, as considered in this enquiry, remained practically unchanged from 1929 to 1931.

### NON-EUROPEAN COUNTRIES

Replies were received from Canada, India, and Japan.

#### Canada

Hours of work are predominantly 8 per day and 48 per week on full-time operations. In Nova Scotia surface workers work 81/2 hours per day, and in Saskatchewan 8 to 10 hours per day was worked in 1931 with some overtime. In British Columbia provincial legislation provides for an 8-hour day and 48-hour week for all mine workers except office staff, etc. In Alberta the law provides for an 8-hour day and 48-hour week for underground workers. In Nova Scotia hours are fixed by agreements, and only engineers, firemen, pump men, etc., work seven days. Other workers get largely increased rates for any overtime. In Nova Scotia miners under the law may not be at their workplaces underground more than 8 hours; they require an average of half an hour to reach the workplace from the top. In Alberta and British Columbia the law provides for 8 hours from bank to bank; the average time at the face is from 7 to  $7\frac{1}{2}$  hours. In the other provinces coal-mining operations are not extensive and hours are not regulated. In Saskatchewan an amendment to the Mine Act, to come into force on 1 November 1932, provides that no miner shall be employed below ground for more than 8 hours in any 24 hours, excepting for emergencies, etc., and that no worker shall be employed above ground for more than 8 hours except by mutual consent of employer and worker, with similar exceptions.

#### India

In British India the law allows a maximum of 12 hours' work for underground workers in any one day; but as only 54 hours' work may be done in a week of six working days, an average of 9 hours only can be worked in a day. In practice the individual time spent in the mine is 8 hours per day and 48 hours per week. For surface workers the law allows a maximum of 12 hours' work in any one day; but as only 60 hours' work may be done in a week of six working days, an average of 10 hours only can be worked per day. In practice actual hours of work are 9 per day and 54 per week.

#### Japan

#### Hours of Work of Underground Workers

## Regulations.

The Ordinance amending the Regulations for the employment and relief of miners and fixing hours of work for underground workers, which was promulgated on 1 September 1928 and came into force on 1 September 1930, provides (section 5) that the holder of a mining right may not employ a miner on underground work for more than 10 hours a day. According to the provisions of this Ordinance, hours of work are calculated from bank to bank for each worker. In the case of a group of workers, the time actually spent from the beginning to the end of the descent of the group must be authorised for each pit by the competent inspectorate, taking account of the number of workers who descend and the means of descending (by walking, truck, or cage). In this case, the hours of work are calculated from the end of the descent to the end of the ascent.<sup>1</sup>

#### Actual Situation.

No data are available for the actual hours of work in 1931. The average working day of underground workers during a period between September and December 1930 (immediately after the enforcement of the Ordinance mentioned above) was 9.33 hours. While it is impossible to state exactly what is included in this figure, it seems to include 6 hours of actual work, and apparently the time required for descent, ascent, meals, and breaks.

#### Hours of Work of Surface Workers

#### Regulations.

There are no provisions relating to surface workers.

### Actual Situation.

The statistics of the Bank of Japan give the daily average as 9.25 hours, excluding meals, breaks, etc.

## Hours of Work of Women and Young Persons

The Ordinance already mentioned contains provisions — to come into force on 1 September 1933 — prohibiting the employment underground and at night of women and of children under 16 years of age. Preparation is now being made for making these provisions effective, and the number of women and children employed underground is decreasing considerably.<sup>2</sup>

The legal maximum day for women and young persons employed on surface work is 11 hours, including 1 hour for meals.

<sup>&</sup>lt;sup>1</sup> The terms of the Ordinance are as follows :

<sup>&</sup>quot;The hours of work of a miner engaged in underground work shall be reckoned from the time when he enters the pit until the time when he leaves the pit.

<sup>&</sup>quot;With regard to miners who enter and leave a pit in a group, if a holder of a mining right has obtained permission from the Chief of the Mines Inspection Bureau in respect of the time required for the group to commence and complete its entrance into the pit, the hours between the time when the last miner of such group enters the pit and the time when the last miner of such group leaves the pit shall be deemed to be the hours of work of each miner belonging to such group for the purposes of the provisions of the first paragraph of section 5."

<sup>&</sup>lt;sup>2</sup> The number of women employed underground in mines employing more than 50 workers (men and women), which was 29,174 in December 1929, had fallen to 8,147 in December 1931.