



# INDIAN MINES ACT, 1923

ANNUAL REPORT

OF THE

## CHIEF INSPECTOR OF MINES IN INDIA

FOR THE YEAR ENDING

31st DECEMBER 1931



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GENERAL PUBLICATION BRANCH  
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# CONTENTS.

	Page.
<b>Introduction—</b>	
Relates to the administration of the Act . . . . .	1
Other mining statistical publications . . . . .	1
<b>Section I.—Persons employed—</b>	
Average figures of labour . . . . .	1
Decrease compared with previous year . . . . .	1
Distribution in respect of sex . . . . .	1
Provincial distribution of female labour, underground . . . . .	2
Labour figures for coal and metalliferous mines . . . . .	2
Average output of coal per person employed in India . . . . .	2
“ “ “ “ “ “ “ “ “ “ other countries . . . . .	2
Supply of labour in Bengal and Bihar and Orissa Coalfields . . . . .	3
“ “ “ “ “ “ “ “ “ “ metalliferous mines in Bihar and Orissa . . . . .	4
“ “ “ “ “ “ “ “ “ “ Assam Coalfields . . . . .	4
“ “ “ “ “ “ “ “ “ “ other provinces . . . . .	4—5
Statement of daily earnings in December in each important mining field in British India . . . . .	6
Wages paid to Indian miners . . . . .	7
<b>Section II.—Output of minerals—</b>	
Coal output in various provinces . . . . .	7
“ “ decrease on previous year . . . . .	8
“ “ chart of monthly raisings and despatches . . . . .	8
“ “ in principal coalfields . . . . .	8
“ “ despatches and consumption in collieries . . . . .	9
Trade conditions . . . . .	9
Coal Grading Board and Soft Coke Cess Committee . . . . .	9
Number of mines using electric power . . . . .	9—10
Quantity of explosives used . . . . .	10
Number of coal cutting machines in use . . . . .	10
Number of mechanical ventilators and safety lamps in use . . . . .	10
Iron Ore output, decrease in <sup>1920</sup> . . . . .	10
Manganese Ore, output, decrease in <sup>1920</sup> . . . . .	10
Lead Silver Ore, output, decrease in . . . . .	11
Tin and Wolfram Ores output . . . . .	11
Chromite Ore output . . . . .	12
Copper Ore output . . . . .	12
Zinc Ore output . . . . .	12
Gems output, Rubies and Sapphires . . . . .	12
Mica output, decrease in . . . . .	12
Rock Salt output . . . . .	13
Limestone output . . . . .	13
Stone output . . . . .	13
Clay output . . . . .	13
Other minerals output . . . . .	14

	Page.
<b>Section III.—Accidents—</b>	
Number of fatal and serious (Non-fatal) accidents and number of persons killed and seriously injured.	14
Proportions of accidents to males and females and rates per 1,000 persons employed.	14
Classification of causes of fatal accidents . . . . .	15
Accidents by ignitions of fire-damp . . . . .	15
„ „ falls of roof and side . . . . .	15
„ in shafts . . . . .	15
„ by explosives . . . . .	15
„ „ irruption of water . . . . .	16
„ „ haulage . . . . .	16
„ „ underground machinery . . . . .	16
„ „ sundries underground . . . . .	16
„ „ surface machinery . . . . .	16
„ „ surface railways and tramways . . . . .	16
„ „ electricity . . . . .	16
„ „ miscellaneous in open workings and on surface . . . . .	16
„ Non-statistical . . . . .	16
Death rate per thousand persons employed . . . . .	16
„ „ „ million tons raised at coal mines . . . . .	16
Chart showing death rate during 1922-32 . . . . .	17
Number of deaths at each class of mine . . . . .	17
 Detailed reports of certain accidents :—	
Falls of roof—	
At the Raneegunge Coal Association Ltd.'s Kustore coal mine . . . . .	17—18
„ „ Bengal Coal Co. Ltd.'s Sodepur (9 and 10 pits) coal mine . . . . .	18
„ „ Newton Chickli Collieries Ltd.'s Newton Chickli coal mine . . . . .	18—19
 Falls of side—	
At the Consolidated Tin Mines of Burma Ltd.'s Taungpila tin mine . . . . .	19
„ „ Mr. Eng Tein Leong's Kyatmi tin mine . . . . .	20
 In shafts—	
At the Bengal Coal Co. Ltd.'s Chanch coal mine . . . . .	21
„ „ Burrakur Coal Co. Ltd.'s Katras coal mine . . . . .	21
„ „ South Busra Coal Co.'s Pure Kujama coal mine . . . . .	22
 Explosives—	
At the Lodna Colliery Co. (1920) Ltd.'s Ninga coal mine . . . . .	22
 Irruptions of water—	
At the Tata Iron and Steel Co. Ltd.'s Jamadoba coal mine . . . . .	22—23
 Haulage—	
At the Burrakur Coal Co. Ltd.'s Katras coal mine . . . . .	23—24
„ „ East Indian Coal Co. Ltd.'s Kendwadh coal mine . . . . .	24
„ „ Raneegunge Coal Association Ltd.'s Kustore coal mine . . . . .	24

CONTENTS.

iii

page.

Section IV.—Prosecutions and amendments to the Act, etc.—

Prosecutions under the Indian Mines Act—

Dhariajoba Colliery Co.'s Dhariajoba colliery . . . . .	26
Khas Kendah Colliery Ld.'s Khas Kendah colliery . . . . .	26
Md. Sandhi & Co.'s Sudamdih colliery . . . . .	26
Central Salanpur Coal Concern's Central Salanpur colliery . . . . .	26
Sreemati Sarat Kumari Debi's Model Brindabanpur colliery . . . . .	26
Agarwalla Bedi & Co.'s Northbrook colliery . . . . .	26
Shewkaran & Sone' Belbaid colliery . . . . .	26
Pandit Gian Chand's Gandhala colliery . . . . .	26
Arjun Mavji's Kirkee stone mine . . . . .	26
Santa Prasad Singh's Bhutdoba colliery . . . . .	26
Pure Dishergarh Colliery Co.'s Pure Dishergarh colliery . . . . .	26
Raja Jagadish Chandra Deo Dhaval Deb's Moulisole steatite mine . . . . .	27
B. B. Chatterjee & Sons' Manjurcola stone mine . . . . .	27
Mundalpur Coal Co. Ltd.'s Mundalpur colliery . . . . .	27
Musunur Venkatasubba Reddy's Ramaprasad mica mine . . . . .	27
N. Venkataramana Reddy's Padmini mica mine . . . . .	27
Mangtural Bagaria's Tasra colliery . . . . .	27
Bhagirathi Ghusick Coal Concern's Bhutdoba colliery . . . . .	27
Chiranjilal Saraogi's Keshabganj colliery . . . . .	27
Lodna Colliery Co. (1920) Ld.'s Ningah colliery . . . . .	27
Newton Chickli Collieries Ld.'s Newton Chickli colliery . . . . .	27
Rai Bahadur Mathura Prasad Motilal and Co.'s Jamai colliery . . . . .	28
Raman Coal Co.'s Egarcoor colliery . . . . .	28
Balai Chand Bhattacharjee's Bagmara colliery . . . . .	28
Ballihari Colliery Co.'s Ballihari colliery . . . . .	28
New Chasnalla Coal Co.'s New Chasnalla colliery . . . . .	28
K. K. Mukherjee's Bowla colliery . . . . .	28
R. C. Sarkar's North Jharia colliery . . . . .	28
Equitable Coal Co. Ld.'s Dishergarh West colliery . . . . .	28
New Kendah Coal Co. Ld.'s Darulah colliery . . . . .	28
Biraj Krishna Mukherjee's New Ghusick colliery . . . . .	28
J. N. Supakar & Brother's Sutikdih colliery . . . . .	29
P. V. Ramana Reddy's Kamakahi-Degapudi mica mine . . . . .	29
A. Penchalu Chetty's Chayadevi Ayyavaripalli mica mine . . . . .	29
G. Subrahmaniam Naidu's Bhuputhri-Dundigam mica mine . . . . .	29
The Owners of 22 mines for failure to submit annual returns . . . . .	20

Prosecution of employees—

Equitable Coal Co. Ld.'s Chowrassie colliery . . . . .	29
Bengal Coal Co. Ld.'s Banksimulla colliery . . . . .	29
Burradhemmo Coal Co. Ld.'s Burradhemmo colliery . . . . .	29
Burrakur Coal Co. Ld.'s Mudidih colliery . . . . .	29
Hirdagarh Collieries Ld.'s Ghorawari colliery . . . . .	29
Amalgamated Coalfields Ld.'s Bhamori colliery . . . . .	29
Consolidated Tin Mines of Burma Ld.'s Taungpila tin and wolfram mine . . . . .	20
Assam Railways & Trading Co. Ld.'s Ledo Colliery . . . . .	29
East Indian Coal Co. Ld.'s Bararee colliery . . . . .	29

	Page.
Section IV.—Prosecutions and amendments to the Act, etc.— <i>contd.</i>	
Prosecution of employees— <i>contd.</i>	
Bengal Coal Co. Ld.'s Chanch colliery . . . . .	29
Standard Coal Co. Ld.'s Standard (Jharia Khas) colliery . . . . .	30
Amalgamated Coalfields Ld.'s Jatachhapa colliery . . . . .	30
Amendments to the Act, etc.—	
Notifications of Governments of Bengal and Bihar and Orissa directing constructions of urinals and latrine accommodations in coal mines.	30
Section V.—General Remarks—	
Health and Sanitation—	
Assansol Mines Board of Health—	
Number of meetings . . . . .	30
Epidemic diseases . . . . .	30
Death-rates . . . . .	30
Infant mortality . . . . .	30
Survey on leprosy . . . . .	31
Jharia Mines Board of Health—	
Number of meetings . . . . .	31
Epidemic diseases . . . . .	31
Death-rate . . . . .	31
Analysis of foodstuffs . . . . .	31
Experimental maternity scheme and child welfare centre . . . . .	31
Rainfall statistics—	
Coalfields of Jharia, Ranigunge and Giridih . . . . .	31
Ambulance work in the coalfields—	
Classes in First-aid . . . . .	31
Number of First-aid Certificates awarded . . . . .	31
Mining Education—	
Number of students at the Indian School of Mines and the results of the examinations . . . . .	32
Mine surveying camp . . . . .	32
Number of students at the Benares Hindu University . . . . .	32
Courses of evening instructions in Bengal and Bihar and Orissa . . . . .	32—33
Mining and Geological Institute of India—	
Membership, meetings and excursions . . . . .	33
Government prize and other medals . . . . .	33
National Association of Colliery Managers, Indian Branch, Indian Mine Managers' Association and Indian Colliery Employees' Association and Tata Collieries Labour Association, Jamadoba—	
Membership and business transacted . . . . .	33—34
Mining Boards in Bengal, Bihar and Orissa and the Central Provinces—	
Membership, meetings and business transacted . . . . .	34

CONTENTS.

v

	Page.
<b>Section V.—General Remarks—<i>contd.</i></b>	
<b>Coal Dust Committee—</b>	
Meeting and experiments . . . . .	35
<b>Board of Examiners—</b>	
Number of meetings . . . . .	35
Appointment of examiners to conduct examinations . . . . .	35
Managers' examinations . . . . .	35
Surveyors' " . . . . .	35
Sirdars' " . . . . .	36
Suspension of sirdars' certificates . . . . .	36
<b>Official Duties—</b>	
Personnel . . . . .	36
Number of mines inspected . . . . .	36
Orders issued and exemptions and permissions granted . . . . .	36—37
Dangerous occurrences . . . . .	37
Cases under the Land Acquisition (Mines) Act, 1885 . . . . .	37

**APPENDICES—**

**Appendix I.—Statistics of Mines and Minerals—**

Table No. 1.—Number of workers and output of minerals . . . . .	38—83
" " 2.—Average hours worked per week in each important mining field . . . . .	84—85
" " 3.—Analysis of figures relating to the output of coal and coke . . . . .	86—87
" " 4.—Number of mines opened, closed and inspected . . . . .	88—99
" " 5.—Fluctuations in the output of principal minerals . . . . .	100
" " 6.—Death-rates during 1922-31 . . . . .	100
" " 7.—Aggregate horse power and purpose for use of electric motors installed at coal mines . . . . .	101
" " 8.—Number of mines where electric power is used and aggregate horse power of electric motors installed . . . . .	101
" " 9.—Number and type of coal cutting machines at work in coal mines . . . . .	102
" " 10.—Number of mechanical ventilators in use at coal mines . . . . .	102
" " 11.—Number of safety lamps in use at coal mines . . . . .	102
" " 12.—Statement of explosives used in mines . . . . .	103

**Appendix II.—Accidents in mines—**

Table No. 1.—List of fatal accidents with causes and remarks . . . . .	104—135
" " 2.—Statement of fatal and serious accidents . . . . .	136—145
" " 3.—Statement of fatal accidents in mines classified according to cause of accident . . . . .	146

**Appendix III.—Prosecutions—**

Statement of prosecutions under the Indian Mines Act and the Indian Penal Code . . . . .	147—154
--	---------

**Appendix IV.—Miscellaneous—**

Statement No. 1.—List of Inspection Circle . . . . .	155
" " 2.—List of certificate holders . . . . .	155—157
" " 3.—Government of Bengal Notification directing construction of urinals and latrine accommodations in coal mines . . . . .	157



FROM

R. R. SIMPSON, Esq., C.I.E., M.Sc.,  
CHIEF INSPECTOR OF MINES IN INDIA.

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,  
DEPARTMENT OF INDUSTRIES AND LABOUR,  
SIMLA.

*Dated Dhanbad, the 11th June 1932.*

SIR,

I have the honour to submit the report upon the inspection of mines in British India for the year ending 31st December 1931.

### INTRODUCTION.

The Indian Mines Act, 1923, applies to British India only and not to the Indian States. For the complete figures of production of all minerals raised from excavations of all depths in British India and the Indian States reference may be made to the statements of the "Mineral Production of India" published annually in the Records of the Geological Survey of India, and to the "Quinquennial Review of the Mineral Production of India" published every five years by the same Department. Detailed information of the mineral industries in Mysore—where the Kolar goldfield is situated—and Hyderabad (Nizam's Dominions) is given in the annual reports of the Chief Inspectors of Mines in those States.

### Section I.—Persons employed.

During the year 1931 the daily average number of persons working in and about the mines regulated by the Indian Mines Act was 230,782, as compared with 261,667 in the previous year. The decrease was 30,885 persons, or 11·80 per cent. Of these persons 115,726 worked underground, 54,912 in open workings and 60,144 on the surface. The numbers of men and women, respectively, who worked underground, in open workings and on the surface were as follows:—

	Men.		Women.	
	1931.	1930.	1931.	1930.
Underground . . . .	98,885	101,649	16,841	18,684
In open workings . . . .	38,833	50,396	16,079	21,186
Surface . . . . .	45,157	52,709	14,937	17,043
<b>TOTAL</b> . . . . .	<b>182,875</b>	<b>204,754</b>	<b>47,907</b>	<b>56,913</b>

The number of women employed underground was 16,841, or 14·55 per cent. of the total number of men and women employed underground.

The percentage of women employed underground in coal mines was 16·81, as compared with 18·39 per cent. in 1930, 23 per cent. in 1929 and 29 per cent. in 1928. The provincial distribution of the women who worked underground was as follows:—

Province.	Number of women employed underground.		
	In coal mines.	In salt mines.	Total.
Bengal . . . . .	5,596	...	5,596
Bihar and Orissa . . . . .	10,263	...	10,263
Central Provinces . . . . .	773	...	773
Punjab . . . . .	...	209	209
<b>TOTAL</b> . . . . .	<b>16,632</b>	<b>209</b>	<b>16,841 in 1931</b> <b>as compared with 18,684 in 1930.</b>

The number of persons employed in coal mines was 158,267, which is 10,734 less than the number employed in 1930. Of these persons, 45,496 were coal-cutters, 15,185 were male loaders and 92,462 were women.

Figures showing the average output of coal per person employed are given below:—

	Tons of coal per person employed.			
	Underground and in open workings.		Above and below ground.	
	1931.	1929-30.	1931.	1929-30.
British India . . . . .	183	194	130	134
Bengal and Bihar . . . . .	187	198	132	137
Assam . . . . .	106	107	78	80
Baluchistan . . . . .	76	69	68	53
Central Provinces . . . . .	159	165	113	117
Punjab . . . . .	90	100	56	55

The steady improvement in the average output of coal per person employed during the last few years was not maintained. The average fell to a figure below the average in the year 1927. The decline may be ascribed mainly to the lessened proportion of coal mined by coal cutting machines. In comparing the figures with similar figures in other countries it should be remembered that both men and women are employed in Indian coal mines. In 1930 the output of coal per person employed above and below ground in the United Kingdom was 262 tons. In 1929 comparative figures in certain other countries were Japan, 150 tons; Transvaal, 598 tons; and the United States of America, 831 tons.

The number of persons employed in metalliferous (including mica, stone, clay and salt) mines was 72,515 which is 20,151 less than the number employed in 1930. 57,070 were men and 15,445 were women. Of the women 209 worked underground in salt mines.

*Bengal and Bihar and Orissa.*—In Bengal and Bihar and Orissa there was an ample supply of mining labour. Although there was no general reduction in rates yet the amount of money earned was less owing to short time working necessitated by the depressed state of the coal trade. Although the general health of persons living within the Raniganj and Jharia mining settlements was fairly satisfactory, yet cholera and small-pox caused no less than 607 deaths. At Argada colliery in the Karanpura Coalfield there were 154 cases of small-pox, of which 24 ended fatally. In last year's report it was stated that the Governments of Bengal and Bihar and Orissa had issued orders directing that on and from 1st April 1932 urinals and latrine accommodation shall be provided on the surface at every coal mine. Subsequently the Indian Mining Association and the Indian Mining Federation appealed against these orders and asked for a postponement of the date until such time as the coal trade is in a better position to bear the expense of constructing urinals and latrines. As the result of these representations the orders have since been cancelled. The Inspector, No. 1 Circle, reports that at Mudidih colliery in the Jharia Coalfield the manager "has introduced a number of latrines down the mine—separate ones for men and women, and there is no doubt that they are used". An account of the activities of the Mines Boards of Health in the Raniganj and Jharia Coalfields is given in Section V of this report, where it will be seen that the interest in maternity welfare work is being maintained.

During the year there were short strikes at the Bhalgora and Simlabahal collieries in the Jharia Coalfield. There had already been reductions in the staff and in the pay of certain members of the staff, and of certain classes of daily paid labourers. In September a further attempt to reduce the wages of daily paid labourers resulted in the men refusing to go to work. After an absence of one day they returned to work having received an assurance that their rates of pay would not be reduced. Subsequently there was an attempt to reduce the allowance of oil issued to the miners, but when the miners refused to go to work the former allowance of oil was continued. After these reductions or attempted reductions of wages relations were strained, and when a cut of from 10 to 25 per cent. of wages for the month of November was announced the whole of the staff and labour force went on strike. The miners and loading coolies were not affected by the reductions but they joined in the strike because they felt that if they did not co-operate their rates also would be reduced shortly afterwards. The strike commenced on 10th December, and work was resumed on the following day after an assurance had been received that the reduction proposed would not be effected. The strike was conducted in a peaceful manner, and the relations between the manager, his staff and the workmen remained cordial. As spokesmen and leaders at the colliery would not come forward because they were afraid of dismissal, the assistance of the Indian Colliery Employees Association was sought by members of the staff. The Secretary of the Association became the spokesman and got into communication with the managing director—Rai Bahadur Seth Sukhlal Karnani. One of the objects of seeking the assistance of the Association was a desire to obtain the support of the public press, and in fulfilment of this desire accounts of the wage dispute at the two collieries were published in the Searchlight,

Amrita Bazar Patrika and Advance during the months of November and December.

At the iron ore mines in the Singhbhum district labour was in excess of requirements. The relations between labourers and employers remained excellent. The general health of the labourers was satisfactory. The housing accommodation is good and particular care and attention is paid to sanitation, in consequence of which there were no outbreaks of epidemic disease or sickness of any serious description.

At the copper mines in the Singhbhum district the supply of labour exceeded the demand. The previous rates of wages were maintained and no strikes or communal trouble was experienced. There was no epidemic disease and beyond seasonal outbreaks of malaria the general health of the labourers was satisfactory.

At the mica mines in Chota Nagpur the supply of labour was in excess of the demand. With a view to the reduction of distress the work available was divided amongst the workmen offering for employment. There were no epidemics and the general health of the labour force was reasonably good.

*Assam.*—At the coal mines in Assam the supply of labour was in excess of requirements. The general health of the labour force was good and there was no epidemic disease. There was no change in the rates of wages.

*Central Provinces.*—In the Pench Valley Coalfield mining labour was again plentiful. The rates of wages of piece workers were reduced by 10 per cent., but the wages of monthly paid staff were not reduced as they had not benefitted by increases of wages in former years. In the first quarter of the year there was a strike at Chandametta colliery. It lasted for seven days, at the end of which the reduction of 10 per cent. was introduced without trouble. At the Newton Chickli Colliery there was an outbreak of cholera causing fourteen deaths.

At the manganese mines the supply of labour was far in excess of the demand, and as far as possible the work available was shared, with the result that weekly earnings were less. With the exception of a little trouble at Munsar mine, where men who had been discharged endeavoured to prevent the remainder from working, no trouble was experienced. The discharged men were reconciled to their lot when the contractor gave an assurance that advances due from them aggregating Rs. 5,000 would be written off. The majority of the workmen were reasonable, and when it was explained to them realised that it was not possible for mineowners to pile up stocks of unsold ore indefinitely. The general health of the mine workers was good, but there was a serious outbreak of small-pox at Kandri, Munsar and Gumgaon mines, where out of 236 cases 37 proved fatal. At Chikla mine 64 persons were attacked with influenza and 10 of them died. The premier mining companies maintained as before permanent labour settlements well equipped with water supply and sanitary arrangements. Free schools for the children of the workmen were maintained as before.

*Punjab.*—Mining labour was again plentiful in the Punjab and the general health of the labourers was satisfactory. At the salt mines where labour is said to be largely in excess of requirements a system was introduced under which each miner was employed for no longer than a fortnight in the month. By this sharing of the employment

available every worker was able to earn a living wage. An investigation of the incidence of anaemia at the Khewra salt mine is to be undertaken. The Labour Union at Khewra continued to function, but its relations with the management were not entirely harmonious. Owing to financial stringency the scheme for appointing a lady doctor and a sanitary inspector at Khewra was postponed. A sports ground and pavillion with facilities for the playing of games by all classes of workers were opened. Building work on the new village sites provided by Government proceeded briskly. Since 1926 a total sum of Rs. 70,600 as non-recoverable advances and Rs. 6,450 as recoverable advances have been paid to miners in respect of their new dwellings. Compulsory free education for boys below the age of 10 years was introduced during the year by the District Board, Jhelum, and as a result there was a large increase in the number of children attending school at Khewra.

The Deputy Commissioner, Jhelum, reports that:—“The relations between the labourers employed at the Tarki quarry and the contractors (S. B. Malik Mohan Singh) were strained for some time during the year owing to the alleged non-payment of wages for a considerable period, but through the intervention of the local authorities assisted by the Vice-Chairman of the District Board, an amicable settlement was arrived at, and the normal working of the quarry was restored in about a fortnight”.

*Madras.*—At the mica mines in the Nellore district labour was plentiful and there were no strikes or epidemics.

*Burma.*—In the Northern Shan States at the mines worked by the Burma Corporation Limited there was at no time a shortage of labour. In all departments of the Company's activities 9,976 persons were employed. The standard rates of wages were reduced by 10 per cent. on 1st June and as a result of this reduction a strike took place. In quelling the rioting which accompanied the strike one person was killed and three injured. The mine remained closed for a few days after which normal operations were resumed at the reduced standard rates of wages. The general health of the Settlement was good. The anti-malaria measures were continued throughout the year with beneficial results. The facilities for recreation were maintained and in addition a swimming pool was constructed. A cinema machine was purchased by the European and Asiatic Clubs, and pictures were shown fortnightly. The Anglo-Vernacular School at Bawdwin teaches Hindi, Urdu, Burmese and English, and the general tone of the school has reached a high level.

In the Katha district where the ruby mines are situated there were 20 cases in which 37 persons were dealt with under the Upper Burma Ruby Regulations, 1887, mostly for stealing gem bearing earth in the Mogok mining area.

*Average daily earnings in rupees, annas and pies during the month of December 1931 in each important mineral field in British India.*

Mineral Field.	Underground.						Open workings.						Surface.			
	Overmen and Sirdars Foremen and Mates.	Miners	Loaders.	Skilled Labour.	Un-skilled Labour.	Females	Overmen and Sirdars Foremen and Mates.	Miners.	Loaders.	Skilled Labour.	Un-skilled Labour.	Females.	Clerical and Supervising staff.	Skilled Labour.	Un-skilled Labour.	Females.
Jharia Coalfield (Bihar and Orissa)	1 5 0	0 11 0	0 11 0	0 12 0	0 8 0	0 7 0	1 0 0	0 12 0	0 0 8	0 11 0	0 0 0	0 8 0	1 6 0	0 11 0	0 8 3	0 0 3
Raniganj Coalfield (Bengal)	1 1 8	0 11 0	0 9 0	0 11 0	0 8 3	0 0 0	0 15 3	0 7 0	0 5 0	0 8 0	0 8 0	0 5 0	1 1 0	0 10 0	0 7 0	0 5 3
Girdih Coalfield (Bihar and Orissa)	1 8 0	0 13 0	0 10 0	0 14 3	0 8 0	0 7 8	1 0 0	0 11 0	0 8 0	...	...	0 6 0	1 6 3	0 18 0	0 7 0	0 5 0
Assam Coalfields	1 0 8	1 8 8	1 2 0	1 2 0	0 15 0	...	...	...	...	...	...	...	1 1 3	1 0 0	0 13 3	0 0 0
Punjab Coalfields	1 0 9	0 12 0	0 11 0	0 10 3	0 8 0	...	...	...	...	...	...	...	1 0 0	0 11 3	0 8 0	0 5 3
Baluchistan Coalfields	1 11 3	1 0 0	1 2 0	1 4 0	...	...	1 0 0	0 10 0	0 10 0	...	...	...	...	...	...	...
Peneh Valley Coalfield (Central Provinces).	1 4 0	0 14 0	0 7 9	0 10 0	0 7 0	0 7 3	...	...	...	...	...	...	1 5 9	0 12 9	0 8 9	0 5 9
Bihar and Orissa Mica	0 11 0	0 7 0	...	0 7 0	0 4 0	...	0 8 0	0 0 3	...	0 4 0	0 4 3	0 3 0	0 16 0	0 9 0	0 5 0	0 3 9
Madras Mica	0 11 0	0 6 9	...	0 7 0	0 5 9	...	0 0 3	0 6 0	...	0 4 0	0 5 0	0 3 9	0 13 9	0 9 3	0 5 0	0 3 9
Central Provinces Manganese	1 7 0	0 8 0	...	0 11 0	0 8 0	...	1 0 3	0 8 3	...	0 14 0	0 8 0	0 4 0	1 10 0	0 14 0	0 5 3	0 3 8
Central Provinces Limestone	...	...	...	...	...	...	1 15 3	0 0 3	...	1 2 9	0 0 3	0 3 9	2 3 3	1 3 0	0 8 0	0 3 3
Bihar and Orissa Iron	...	...	...	...	...	...	1 2 0	0 5 0	...	0 10 2	0 0 0	0 4 0	1 7 0	0 16 0	0 5 0	0 4 0
Burma Lead.	14 12 3	1 13 0	...	1 12 3	1 0 0	...	5 0 3	...	...	...	1 1 0	...	3 15 9	2 5 0	1 0 0	...
Burma Tin	3 9 0	1 1 0	...	1 3 0	0 15 0	...	2 4 3	0 15 0	...	1 0 0	1 0 9	0 9 0	2 8 3	1 0 3	0 4 3	...
Punjab Salt.	7 10 0	3 7 9	...	1 2 3	0 7 0	0 8 0	1 4 0	1 3 6	...	...	...	...	0 13 0	1 5 0	0 13 0	0 7 0
Bihar and Orissa China Clay	...	...	...	...	...	...	0 6 3	0 8 0	...	0 5 3	0 4 0	0 3 0	1 6 3	0 9 0	0 4 3	0 3 0
Punjab Slate.	0 5 3	0 5 0	...	0 0 0	...	...	0 8 3	0 5 0	...	0 0 0	0 5 0	...	0 14 0	...	0 6 0	...
United Provinces Stone	...	...	...	...	...	...	0 9 9	0 12 0	...	0 10 0	0 7 3	0 3 3	0 10 0	0 3 0	0 5 0	0 2 0

9

In the Tavoy and Mergui districts the supply of labour was largely in excess of the demand. The proportion of Burmese employees is said to have increased. The local authorities made arrangements for unemployed villagers to be taken on at the mines owned by the larger companies. The rates of wages fell. There were no strikes and the relations between labourers and employers were amicable. The larger companies maintained well equipped dispensaries with adequate stocks of medical and first-aid requisites. The housing arrangements at the more important mines were satisfactory and a good supply of water is obtained from wells. In some cases a piped water supply is provided from reservoirs. Primary education to the children of mining employees is given at Kanbauk, Hermyingyi and Kyaukmedaung mines.

In the table on page 6 figures are given of the average daily wages paid in December in each important mining field in India. In the Jharia, Raniganj, Pench Valley (Central Provinces) coalfields and in the coalfields of the Punjab and Baluchistan the wages paid to coal miners fell by from 10 to 15 per cent.; in the Giridih coalfield there was no change, and in the coalfield of Assam there was an apparent increase of 20 per cent. There was a small fall in the wages of mica miners, and a fall of more than 10 per cent. in the wages paid to manganese miners. There was again a sharp fall in the wages paid to tin miners in Burma. There was an apparent increase of more than 100 per cent. in the wages paid to salt miners in the Punjab, where the average daily wage appears to have been Rs. 2-7-9—a wage about three times that of coal miners, and considerably in excess of the daily wage paid to lead miners.

To some extent the reductions of wages have been counterbalanced by the fall in the cost of food stuffs. The wages of the majority of miners in India are, however, barely sufficient for subsistence. They compare most unfavourably with those of miners in South Africa. In the coal mines of the Transvaal the average daily rate of pay must not be less than two shillings, and in addition the miner is housed, fed generously and medically attended. Further he is guaranteed payment for 22 shifts per month, work or no work, and this brings up the average rate of pay to three shillings per day.

## Section II.—Output of Minerals.

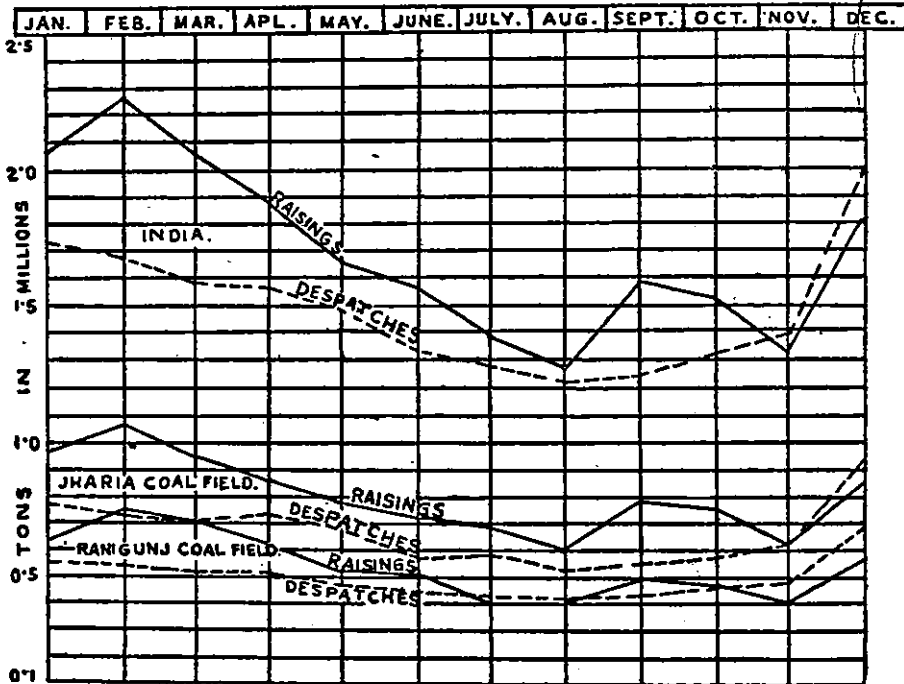
### COAL.

*Output.*—The statement given below shows the output of coal in the various provinces in British India during the years 1930 and 1931:—

	Output in tons.	
	1931.	1930.
Assam . . . . .	274,278	358,035
Baluchistan . . . . .	13,472	11,301
Bengal . . . . .	5,810,184	6,316,528
Bihar and Orissa . . . . .	13,388,783	14,995,007
Central Provinces . . . . .	973,040	952,371
Punjab . . . . .	54,840	50,619
<b>TOTAL</b> . . . . .	<b>20,514,597</b>	<b>22,683,861</b>

The total output in 1931 was 20,514,597 tons of a declared value of Rs. 7,76,57,262. The decrease in the output was 2,169,264 tons, *i.e.*, 9.56 per cent. The opening stocks in 1931 were 910,408 tons and the closing stocks 1,414,340 tons. In the chart which appears below the raisings and despatches of coal are shown month by month.

#### RAISINGS & DESPATCHES OF COAL MONTH BY MONTH IN 1931



The maximum output was obtained in February and the minimum in August. It was not until November that monthly despatches were in excess of raisings. In December the excess of despatches was considerable. The reason for these excesses was anticipation of an increase in railway freight.

The output in Bihar and Orissa decreased by 1,606,224 tons, and in Bengal there was a decrease of 506,344 tons. In the Central Provinces the output increased from 952,371 to 973,040 tons. There were small increases in the Punjab and Baluchistan and a considerable decrease in Assam. The figures of output for the principal coalfields are as follows:—

Coalfield.	1931.	1930.	Percentage of increase + or decrease—.
Jharia . . . . .	9,755,037	10,753,858	- 9.29
Raniganj . . . . .	6,530,713	7,218,691	- 9.53
Bokaro . . . . .	1,656,597	2,160,249	- 23.31
Giridih . . . . .	713,133	613,533	+ 16.23
Karainpura . . . . .	461,678	482,141	- 4.24
Pench Valley . . . . .	750,015	740,391	+ 1.30
Assam . . . . .	274,278	358,035	- 23.39



The outputs of the Jharia and Raniganj Coalfields fell by more than 9 per cent., and in the Bokaro and Assam Coalfields there were decreases of more than 23 per cent. The increase of 16 per cent. in the output of the Giridih Coalfield may be set off against the decrease of 20 per cent. in the previous year. There was a small increase in the output of the Pench Valley Coalfield and a decrease of more than 4 per cent. in the output of the Karanpura coalfield.

*Despatches.*—The despatches of coal were 17,681,474 tons, and 1,222,569 tons or 5.96 per cent. of the raisings were consumed on the collieries. The quantity of coal used for coking at the collieries was 1,106,622 tons, and 724,176 tons of soft coke and 55,484 tons of hard coke were made. There was again a small decrease (3.39 per cent.) in the quantity of soft coke manufactured at the collieries for domestic consumption; it may be that the decrease would have been much greater but for the propaganda work done by the Indian Soft Coke Cess Committee. The quantity of hard coke made at the collieries is small. Most of the hard coke is made at coke making plants which do not come under the Mines Act, and 1,572,028 tons of coal were despatched to coke making plants of this kind in 1931. This quantity is 125,473 tons more than in 1930. Analyses of the figures relating to the output of coal and the manufacture of coke will be found in Appendix I, Table No. 3.

*Trade Conditions.*—Notwithstanding the continued depression in trade, and largely due to co-operation within the industry, prices were fairly well maintained in the early part of the year. Towards the end of the year there was a break in prices, and forced selling of stocks at the collieries led to an average drop in prices of annas 12 to Re. 1 per ton. Shipments of coal from Calcutta showed a slight increase as compared with the previous year, and the increase was perhaps due to the fact that Hongkong was again in the market for Indian coal. A fair business was done in bunker coal but the average price paid was a good deal lower than in 1930. For the greater part of the year there was an ample supply of wagons. Owing to the Railway Board's decision to impose a surcharge of 15 per cent. on coal freights as from 15th January 1932 a strong demand for wagons set in towards the close of the year and the Railways suspended for a time the practice of stabling wagons in colliery sidings. In the Central Provinces the volume of trade was only slightly greater than in the previous year. In the second quarter of the year prices declined and thereafter failed to recover. Heavy rains in October led to failure of the cotton crop and consequently supplies for ginning factories were less than usual. Owing mainly to depression in the tea industry there was a smaller demand for coal in Assam.

*Coal Grading Board and Soft Coke Cess Committee.*—The good work done by the Indian Coal Grading Board since its establishment in 1926 was continued throughout the year. It appears from figures compiled by the Chairman of the Indian Soft Coke Cess Committee, constituted by Act VIII of 1929, that the Committee is now reaping the benefit of its extensive propaganda work. In the last five months of the year 498,277 tons of soft coke are said to have been despatched.

*Use of Electricity both at coal mines and at other mines.*—The number of collieries using electric energy was 124, and the aggregate horse power at collieries increased from 76,460 to 81,298, i.e., by 6.8

per cent. During the year electric plant was installed and brought into operation in seven additional coal mines; it was withdrawn from three mines, but probably only temporarily.

Electricity was used at 18 metalliferous mines, and the aggregate horse power installed was 9,593, a decrease of 5.18 per cent.

Statistics of the electrical plant in use at mines in the various provinces of British India and in certain mine fields are contained in Appendix I, Tables Nos. 7, 8 and 9.

*Explosives.*—During the year 2,496,777 lb. of gunpowder; 233,093 lb. of high explosives; and 135,119 lb. of “permitted” explosives were used at coal mines. These figures compare with 2,844,637 lb. of gunpowder; 283,083 lb. of high explosives; and 203,165 lb. of “permitted” explosives used in 1930. A statement of the kind and quantity of explosives used during the year in the different kinds of mines under the Act is given in Appendix I, Table No. 12.

*Coal Cutting Machines.*—The number of coal cutting machines in use decreased from 202 to 195. Of these 188 were worked by electricity and 7 by compressed air. 85 machines were at work in the Jharia coalfield; 100 in the Raniganj coalfield; 4 in the Bokaro coalfield; 4 in the Karanpura coalfield and 2 in the Central Provinces. Coal cutting machines were in use in 63 mines, and the total area undercut by the machines was 10,888,305 sq. feet, as compared with 11,170,355 sq. feet undercut in the previous year.

*Mechanical Ventilators.*—In Appendix I, Table No. 10, particulars are given of the number of mechanical ventilators in use in coal mines under the Act. In 1931, 92 mechanical ventilators were in use, the number being 83 in the previous year.

*Safety Lamps.*—In Appendix I, Table No. 11, particulars are given of the number of safety lamps in use in coal mines under the Act. 23,071 safety lamps were in use in 1931, as compared with 22,654 in 1930.

#### IRON ORE.

The production of iron ore was 590,176 tons, valued at Rs. 12,69,280, as compared with 1,132,893 tons in 1930. The reduction was due to the depressed state of the market for pig-iron.

#### MANGANESE ORE.

There was a decrease of more than 44 per cent. in the output of manganese ore, the figures of production being 347,373 tons, valued at Rs. 25,56,889, as compared with 623,678 tons in 1930. The average reported value per ton of manganese ore produced fell from Rs. 14.64 in 1930 to Rs. 7.36 in 1931. The position of the manganese industry became steadily worse and at the end of the year there was no demand for ore. Mineowners have been forced to shut down many of their mines and to maintain no more than a nucleus of miners and staff at other mines.

The Railway Freight Rebate scheme was modified to suit changed conditions, and has given some small relief. The new Bengal Nagpur Railway line from Raipur to Vizagapatam was opened for goods traffic at the end of the year, but as the proposed rates of railway freight are

only Re. 1 per ton less than the existing rates to Calcutta, and it is estimated that ocean freight from Vizagapatam will be 1s. 6d. to 3s. per ton more than from Calcutta there seems at present no likelihood of manganese ore being exported from the Central Provinces to Vizagapatam. The average f.o.b. price for all grades of ore was 9'25d. per unit, as compared with 10'32d. per unit in 1930.

#### LEAD-SILVER ORE.

The output of lead-silver ore from the Bawdwin mine in the Northern Shan States, Burma, was 397,679 tons as compared with 529,814 tons in 1930. The decrease was 24·94 per cent. 73,280 tons of refined lead; 1,505 tons of antimonial lead; 5,900,400 ounces of refined silver; 13,437 tons of copper matte; and 2,911 tons of nickel speiss were produced. The experimental zinc plant at the Nautu mill produced 51,455 tons of zinc concentrates.

The average values of metals extracted were as follows:—Refined lead, Rs. 173-2-6 per ton; refined antimonial lead, Rs. 132-9-5 per ton; and refined silver, Re. 0-14-1 per troy ounce.

The quantities of materials used for the purpose of fluxes were as follows:—Iron ore, 24,348 tons; limestone, 21,196 tons; quartz rock, 1,603 tons; and iron pyrites, 2,842 tons.

Mining methods and costs were completely overhauled during the year. The introduction of roller bearing trucks throughout the mine resulted in the number of trucks being reduced to one-half. Two storage battery locomotives were set to work at No. 8 Level—a main transport level. By the introduction of steel sets in replacement of timber in development drives and cross-cuts more rapid progress has been obtained. Mechanical scrapers were successfully introduced underground. At the mill and smelter considerable alterations and improvements were made and during the latter part of the year the combined efficiency of the mill and smelter attained its maximum. With a view to providing additional hydro-electric power a second dam is to be built some four miles up-stream from the Mansam falls. A commencement of this work was made at the end of the year and it is expected that it will be completed by the end of 1932.

In the Southern Shan States at the Bawzaing mine owned by the Shan States Silver Lead Corporation Limited, mining operations ceased, and only a small maintenance staff was retained. At Messrs. Steel Brothers' Mawson mine no mining has been done for some two years.

#### TIN AND WOLFRAM ORES.

The output of tin ore was 2,552 tons, valued at Rs. 21,02,071, as compared with 3,001 tons in 1930. 969 tons of wolfram ore valued at Rs. 3,80,297 were produced, as compared with 1,509 tons in 1930.

In the Mergui district no dredges were at work at the end of the year, but alluvial mining was being carried on in the Palaw, Tenasserim and Bokpyin Townships. A small smelter was operated at Karathuri.

In the Tavoy district at the larger mines owned by the Consolidated Tin Mines of Burma, Limited, pipe lines and flumes were under construction, and the firm is constructing a smelter at Tavoy. At Heinda

and Kanbauk mines monitors were installed. Messrs. The Tavoy Tin Dredging Corporation, Limited, operated dredges at Heinze Basin and Kyaukmedaung.

#### CHROMITE ORE.

The production of chromite ore was 14,938 tons, valued at Rs. 2,18,560, as compared with 30,488 tons in 1930. When the mines were visited towards the end of the year all production had ceased.

#### COPPER ORE.

The output of copper ore was 153,636 tons, valued at Rs. 22,71,940, as compared with 123,749 tons in 1930. The whole of the production came from the Mosaboni mine in the Singhhbum district. The production of refined copper was 4,069 tons, as compared with 2,974 tons in the previous year. The rolling mill produced 3,637 tons of yellow sheet metal, and absorbed 2,462 tons of copper ingots. The average selling price of copper ingots and yellow sheet metal were Rs. 673 and 719 per ton, respectively.

The system of breaking ground by direct payment per foot of hole drilled has continued to show a great improvement on the old contract system and has undoubtedly proved to be more beneficial to both workman and employer. The records maintained show that the rate of drilling has increased from 25 to 50 feet per machine shift, and it is confidently anticipated that the latter figure will be further improved.

As mentioned in an earlier paragraph 13,437 tons of copper matte were produced in the smelting of lead-silver ore in Burma.

#### ZINC ORE.

From the composite ore mined at Bawdwin mine in the Northern Shan States, Burma, 51,455 tons of zinc concentrates were produced for shipment. The production in 1930 was 57,620 tons.

#### GEMS.

The value of the gems mined by the Burma Ruby Mines, Limited, was:—

	Rs.
Rubies . . . . .	40,364
Sapphires . . . . .	2,500

During the year the Company surrendered its lease, and gem mining in the Katha district is now being carried on only by licensed native miners. The Government revenue from license fees was Rs. 92,966, as compared with Rs. 2,34,740 in the previous year.

#### MICA.

The quantity of mica consigned was 38,863 cwt., valued at Rs. 20,32,634, as compared with 52,519 cwt. in 1930. The decrease was 26 per cent. The output of dressed mica in 1931 was 46,177 cwt., as compared with 55,351 cwt. in 1930.

The weight and value of block mica shipped from Calcutta in 1930 and 1931 are said to have been as follows:—

	Cwt.	Rs.
1930 . . . . .	55,323	59,71,227
1931 . . . . .	33,244	31,37,492

or a reduction of 40 per cent. in weight and 47 per cent. in value. Foreign markets were filled with stocks for which there were no buyers, and much mica was sold at a loss to meet matured bills. Prices for block mica fell on an average about 10 per cent., and the price of splittings fell about 15 per cent. The low prices reacted on mining operations, and by the end of the year little mining was being done. Early in the year the premier mica mining company installed five new air compressors and at the close of the year only three of them were working.

Owing to lack of demand the majority of the mica mines in the Nellore district of the Madras Presidency were either closed or worked on a reduced scale throughout the year. The few mines still working are those which produce mica of a stained or not too heavily spotted quality.

#### ROCK-SALT.

The production of rock-salt was 134,916 tons, as compared with 148,184 tons in the previous year. Following on the recommendations of the Tariff Board and the Salt Survey Committee the scheme for placing crushed rock-salt from the Khewra mine in the Punjab on the Bengal market has been approved. Designs for the crushing plant have been drawn up and tenders are being invited from manufacturers. It is hoped that it will be possible to export crushed salt towards the end of the year 1932. With a view to displacing the present expensive compressed air machines, an electrically driven chain cutter was introduced into the Khewra mine during the year; it has done excellent work.

#### LIMESTONE.

The reported production of limestone was 862,226 tons, valued at Rs. 12,30,489, as compared with 1,143,312 tons in 1930.

#### STONE.

Returns were submitted by the owners of one hundred and sixty-two stone mines, and the figures of production were as follows:—1,607,592 tons of igneous rock; 52,776 tons of laterite; 27,160 tons of sandstone; 25,701 tons of gravel; and 58,650 tons of *murum*. The total production was 1,772,079 tons, as compared with 3,261,622 tons in 1930.

#### CLAYS.

From the twenty-four clay mines from which figures were obtained 27,500 tons of fire-clay, 17,884 tons of china clay and 56,638 tons of ordinary clay were produced.

## OTHER MINERALS.

The production of other minerals was as follows:—7,955 tons of slate, valued at Rs. 1,95,520; 4,978 tons of magnesite, valued at Rs. 21,540; 3,556 tons of gypsum, valued at Rs. 4,903; 2,300 tons of barytes, valued at Rs. 19,400; 856 tons of steatite, valued at Rs. 19,175; 507 tons of ochre, valued at Rs. 5,356; 333 tons of feldspar, valued at Rs. 3,300; 250 tons of kyanite, valued at Rs. 3,705; 109 tons of apatite, valued at Rs. 1,067. Small quantities of fuller's earth, asbestos, columbite and bismuth were also produced.

## Section III.—Accidents.

During the year 1931 at mines regulated by the Indian Mines Act, 1923, there were 189 fatal accidents, which is 28 less than in 1930, and 22 less than the average number in the preceding five years.

In addition to the fatal accidents there were 591 serious accidents involving injuries to 613 persons, as compared with 745 serious accidents involving injuries to 769 persons in the previous year. No record is maintained of minor accidents. The so-called "serious" accidents reported are those in which an injury has been sustained which involves, or in all probability will involve, the permanent loss of the use of, or permanent injury to, any limb, or the permanent loss of or injury to the sight or hearing, or the fracture of any limb or the enforced absence of the injured person from work for a period exceeding twenty days.

227 persons were killed and 642 persons were seriously injured. The latter figure includes 29 persons injured in fatal accidents. The number of persons killed is 30 less than in 1930. 183 of the persons killed were men and 44 were women. In one case thirteen lives, in two cases five lives, in one case four lives, in one case three lives and in thirteen cases two lives were lost.

The proportions of accidents which occurred to men and to women, respectively, underground, in open workings and on the surface were as follows:—

	No. of fatal accidents.	No. of men killed.	No. of women killed.	Death rate per 1000 persons employed.		No. of serious accidents.	No. of men injured.	No. of women injured.	Serious injury rate per 1000 persons employed.	
				Men.	Women.				Men.	Women.
Underground .	149	133	33	1.34	1.96	424	397	46	4.01	2.73
Open workings .	16	19	6	0.49	0.37	48	41	7	1.06	0.44
Surface .	24	31	5	0.69	0.33	119	112	10	2.48	0.67

The high death rate (1.96 per 1,000) of women employed underground is worthy of remark; it is more than double the rate recorded

in the previous year. The causes of the fatal accidents have been classified as follows:—

	Number of fatal accidents.	Percentage of total number of fatal accidents.
Misadventure . . . . .	137	72.49
Fault of deceased . . . . .	28	14.82
Fault of fellow workmen . . . . .	6	3.17
Fault of subordinate officials . . . . .	10	5.29
Fault of management . . . . .	6	3.17
Faulty material . . . . .	2	1.06
	<hr/>	<hr/>
	189	100.00
	<hr/>	<hr/>

*Firedamp.*—It is satisfactory to record that no lives were lost by ignitions of firedamp. In three separate ignitions of small quantities of firedamp, however, three persons were seriously injured.

*Falls of ground.*—Falls of roof and sides caused 102 fatal accidents and 163 serious accidents. As compared with the figures in the previous year the total number of accidents increased from 255 to 265 and the number of persons killed increased from 118 to 126. In eighteen accidents the persons killed had gone into dangerous places and had disregarded fences put up to prevent access. Many accidents would have been avoided if the supervision exercised had been closer and more intelligent. Thirteen of the fatal accidents were due to fall of sides in open workings. As the underground workings of coal mines increase in depth there is a greater liability to accident caused by masses of coal falling from the sides of lofty pillars subjected to "weight" by reason of the extraction of adjacent pillars. The only satisfactory means of avoiding this danger is the complete or partial filling up of the excavated ground—the process commonly known in India as "sand-stowing". Although the cost of the process is such as to preclude its voluntary use at the present time it may soon become necessary in the interests of safety to prohibit, under certain circumstances, the extraction of pillars unless a filling method of working is employed.

*In shafts.*—There were 8 fatal accidents and 15 serious accidents in shafts, as compared with 9 fatal accidents and 12 serious accidents in the previous year. In two cases persons attempted to cross the bottom of the shaft instead of using the bye-pass provided, and were crushed under the descending cage; and in two cases persons working at intermediate insets in shafts fell to the bottom of the shaft.

*Explosives.*—Nine fatal accidents and 28 serious accidents were caused by explosives. In the previous year the figures were 19 and 31, respectively. In one accident 13 persons were killed by an explosion of country gunpowder in a godown on the surface where a number of people had taken shelter during heavy rain. Three of the accidents were due to persons returning to places before all the charges had exploded. In two accidents persons were killed by stone projected by blasting in open workings.

*Irruption of water.*—In one accident two women were drowned by an irruption of water from one part of underground workings to another. The accident was due to an omission in surveying which was not detected until water rushed through from one working to the other.

*Haulage.*—There were 32 fatal accidents and 123 serious accidents on haulage roads. One accident was due to the breaking of a haulage rope. Thirteen were due to failures of couplings or drawbars, neglect to attach couplings or couplings falling off of their own accord. Three persons were killed and nine injured when riding on tubs. Many fatalities would have been avoided if the orders preventing persons from sitting down on haulage roads in places exposed to danger had been more strictly enforced.

In respect of Mudidih colliery in the Jharia Coalfield the Inspector, No. 1 Circle, reports as follows:—"I was impressed by the 'safety notices' at this mine, and there is no doubt that the manager has taken particular interest in 'safety first' measures. He has introduced a 'safety rope' for use on the main haulage inclines. This rope passes over the set to prevent runaways in the event of breakages."

*Underground machinery.*—One fatal accident and seven serious accidents were caused by underground machinery.

*Sundries underground.*—Ten fatal accidents and 119 serious accidents were due to miscellaneous causes underground.

*Surface machinery.*—One fatal and twenty serious accidents were caused by surface machinery.

*Surface Railways and Tramways.*—Twelve fatal accidents and 41 serious accidents took place on surface railways and tramways. Six of the fatal accidents took place during hand shunting operations.

*Electricity.*—It is satisfactory that there were only one fatal accident and two serious accidents attributable to electricity. The fatal accident was caused by a workman coming into contact with bare wires charged with electricity at 550 volts.

*Miscellaneous in open workings and on the surface.*—In open workings two fatal accidents and 15 serious accidents were due to miscellaneous causes, and 10 fatal accidents and 55 serious accidents of this kind took place on the surface.

*Accidents excluded from the statistics.*—Twenty-three accidents causing 23 deaths were excluded from the statistics for reasons which are given in Appendix II. Six were cases of drowning and two were cases of burning. In six cases people were killed by falls of side in open workings which had been abandoned.

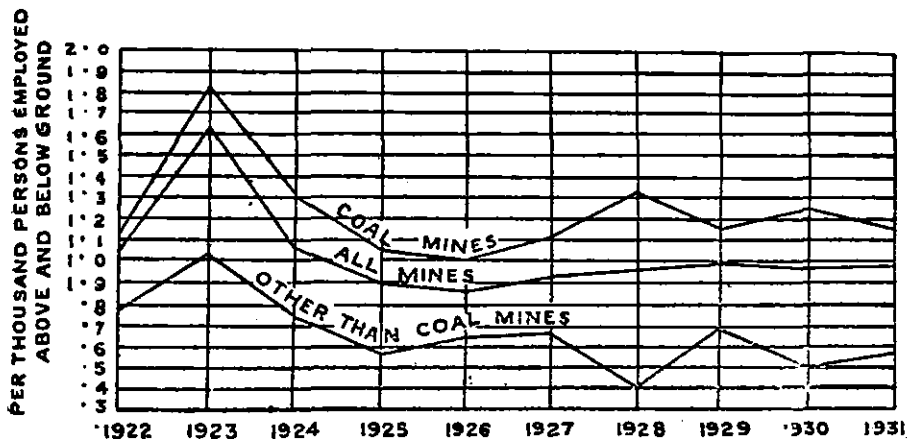
*Death rates.*—The death rate per thousand persons employed above and below ground was 0.98, which was the same as the rate in 1930. The average rate for the preceding five years was 0.95. At coal mines the rate was 1.17, as compared with 1.25 in 1930. At mines other than coal mines the rate was 0.58, as compared with 0.50 in 1930.

The chart overleaf shows graphically the variations in the death rate during the decade 1921-1930.

The death rate per million tons raised at coal mines was 9.02, while that of the preceding five years was 9.05.



CHART SHOWING  
THE DEATH RATE FROM ACCIDENTS DURING THE PERIOD 1922-1931



The high rate in 1923 was due chiefly to an explosion in a coal mine which caused the loss of 74 lives.

Deaths occurring in each class of mines were as follows:—185 in coal mines, 3 in mica mines, 5 in silver-lead mines, 20 in tin and wolfram mines, 3 in limestone mines, 4 in stone mines, 3 in a copper mine, 2 in salt mines, one in a chromite mine and one in a barytes mine.

Sixty five persons lost their lives by falls of roof, 61 by falls of side, 8 in shafts, 22 by explosives, 2 by irruption of water, 32 by haulage, 14 by other accidents underground and 23 on the surface.

A list of the fatal accidents appears in Appendix II, Table I, where each is described briefly. The details of certain accidents are reported at greater length as follows:—

#### FALLS OF ROOF.

*No. 45.—The Raneeunge Coal Association, Limited's Kustore coal mine.*

In a certain area of workings, pillars of coal in a seam 19 feet thick were being extracted. In one of the working places within the area blasting had been done, and the shot-firer and an overman who examined the place after the blasting found the roof to be unsound and ordered the loaders not to enter the place. Notwithstanding these orders two workmen entered it, and whilst they were loading coal a mass of roof coal, 14'×6'×6" thick, fell from the roof and struck them. One of them was killed instantly and the other was severely injured. In his report on the circumstances connected with this accident Mr. W. Kirby, Inspector of Mines, No. 1 Circle, remarked as follows:—

“My enquiry has revealed that for two different reasons (according to their own statements) the shot-firer and the overman considered that no one should enter the place of accident. They gave verbal orders

to the loaders not to enter and then went away. This in my opinion was not sufficient. The overman, as the senior official, should have fenced the place off. He is, therefore, in some degree responsible for the accident. The placing of a fence across the entrance to the place of danger would, I consider, have been sufficient to deter these men from entering, for it was not a question of entering an area to rob coal but merely a question of some slight delay until they were allowed to enter. Too much reliance is placed on verbal orders and this is the frequent cause of accidents in this country. When a working place is found to be dangerous it often happens that the inspecting official gives orders to the surrounding labour not to enter and then walks off to bring propping mistris or carpenters. It is during this latter period that accidents often occur. If the official himself would in the first place erect a temporary fence or if this were impossible, send someone to bring the carpenter, whilst he remained in the vicinity, accidents of this kind would not occur so frequently."

*No. 49.—The Bengal Coal Company, Limited's Sodepur (9 and 10 Pits) coal mine.*

At the place where this accident occurred the Dishergarh seam, 18 feet in thickness, and inclined at an angle of 1 in 5 was being worked at a depth of 560 feet below the surface. The extraction of pillars 60 feet square had been commenced, and one and a half pillars had been extracted. Within this extracted area the props had been withdrawn and the roof shale, 3-4 feet thick, had fallen.

In the process of extraction it was usual to drive a split through the pillar from dip to rise and thereafter another split at right angles, dividing the half pillar next the goaf into two portions. In the present case this had been done and one of the quarter pillars or "stooks" had been completely extracted (*see Plan A*). The work of extracting the second quarter or "stook" was in progress and it had been reduced in size to 15 feet by 8 feet when suddenly and without warning it collapsed, and at the same time a mass of roof, 30 feet square and 5 feet thick fell, killing five miners and seriously injuring another man. The roof which fell had been supported by some forty props. These props were not broken but, owing to the steep dip of the strata, they reeled over and fell out. It is difficult to understand why the roof should have collapsed without warning, but the fact that in the small goaf on two sides of the place the roof had not fallen may have caused the shale roof to break away prematurely from the main roof over a part of the area under extraction. After the accident the manager decided to use cogs as a means of steadying the roof.

*No. 52.—Messrs. The Newton Chickli Collieries Limited's Newton Chickli coal mine.*

At this mine pillars in a coal seam, 9 feet thick, were being extracted by the common method of splitting the pillars into four and thereafter extracting each quarter or "stook" in turn. On 20th April 1931 two gunpowder shots had been fired in a "stook" about 5 feet square, and the "stook" had been reduced to the shape of an hourglass about one foot square in the middle. Whilst a miner was loading coal in the vicinity, coal from the "stook" fell upon him and severely injured him. Shortly afterwards the whole "stook" collapsed. Although there was

some reason to believe that unreasonable risk was being taken in the effort to extract the whole of the coal yet there was no clear proof of culpable negligence.

On 5th December 1931 whilst the last part of a "stook" of coal was being extracted the roof broke down in the adjacent goaf, and the fall extended over the working place. A timberman was killed and a miner was severely injured. The Junior Inspector who enquired into the circumstances of this accident was of the opinion that extraction had been carried beyond the safe limit. The manager agreed to his suggestion that in future "stooks" shall not be reduced to dimensions less than 6 feet square.

#### FALLS OF SIDE.

##### *Nos. 78 and 85.—The Consolidated Tin Mines of Burma Limited's Taungpila tin mine.*

Many of the tin and wolfram mines in South Burma are situated in narrow valleys where the hill slopes are steep and covered with dense jungle. The rainfall is exceptionally heavy and the soil and sub-soil become so sodden that land-slips are of frequent occurrence.

At the Taungpila mine the side of a hill is being removed by hydraulic mining operations. Jets of water under high pressure and issuing from hinged nozzles known as monitors are directed so as to impinge against the side of the hill, and the rocks being of soft character are torn away and carried down in channels to sluicing boxes where the mineral ores they contain are separated from them.

At 10-30 P.M. on 4th August 1931 hydraulic mining operations were in progress when a mass of ground, measuring 100' x 80' x 50', slipped from the side of the hill and thereafter moved more or less horizontally for a distance of 350 feet before it came to rest. One of the men operating the monitors and another who at the time was cleaning the mouth of the headrace in the paddock were buried by the debris and killed.

At 12-45 P.M. on 14th September 1931 hydraulic mining operations were in progress at the same mine when a waterlogged mass of ground, 150' x 100' x 90', slipped from the face of the excavation and moved almost horizontally as far as a sluicing box, 1,000 feet distant. As soon as the ground began to move a warning whistle was blown, in accordance with standing orders, and all the eighty-five persons at work in the open excavation had sufficient time to move to places of safety. Four workmen, however, who were at work in the sluice box were buried and killed, whilst a fifth was fatally injured. It was evident that they had not heard the warning whistle, and presumably they thought themselves sufficiently far away from the face to be out of danger.

With a view to avoiding accidents of this kind the management proposes to cut a deep V shaped channel into the face of the hill so that all ground brought down by the monitors will gravitate to the bottom of this channel and from thence will be washed down to the paddock by a monitor. It may be hoped that this method combined with the maintenance of a flatter slope of the working face will prove to be a safer method of working.

*No. 88.—Mr. Eng Tein Leong's Kyatmi tin mine.*

In the Annual Report for 1928 unfavourable comment was made on the unsound mining practices only too prevalent in the mining of tin by open excavation in the jungles of south Burma. The accident now to be described took place in an open cutting, 50 feet wide and 30 feet in depth. At the bottom of the cutting there was a sluicing channel, 6 feet wide and 6 feet deep, and in this channel four miners were at work when a mass of ground, measuring 22' × 10' × 6', fell upon them from one of the sides of the cutting. Three of the men succeeded in extricating themselves, but the fourth was buried and killed.

Inquiry into the circumstances of the accident could not be made until five months after it had occurred, and by that time conditions in the open cutting had changed. The Inspector, however, was of the opinion that the accident was due to the sides of the cutting not having been sufficiently sloped. The manager pleaded in extenuation that there had been heavy rain just before the accident. Heavy rain, however, is in this part of India not an unusual occurrence—the annual rainfall is in the neighbourhood of 250 inches. The sides of the cutting should have been sufficiently sloped or stepped to avoid danger from falls of ground caused by heavy rain.

The manager said that he did not visit the mine more often than three or four times during the month, and that he could not remember when he last visited the mine prior to the occurrence of the accident. In addition to his duties as manager he was also contractor at another mine some 9 miles distant. Daily supervision was exercised by a mistry (foreman) who had left the mine prior to the Inspector's inquiry.

In showing cause why criminal proceedings should not be instituted against him the owner of the mine put forward various excuses, one of which reads as follows:— "As is the common practice of the district the deceased was only a tributor, whose work is solely at his discretion and as such the mine manager has in no way direct control over him. The tributors worked when and where they like and they were paid according to the amount of tin ore won".

As not infrequently happens when an accident occurs at a mine in Burma no payment under the Workmen's Compensation Act had been made to the dependants of the deceased. As the Inspector was unable to ascertain their names, the Deputy Commissioner of the district was asked to get into touch with them.

Owing to the time limit of six months and the distance from the headquarters of the Mines Department the institution of criminal proceedings in cases of this kind is a matter of considerable difficulty. A proper enforcement of the safety provisions of the Mines Act will not be possible until an Inspector of Mines has been posted to South Burma. Even then the difficulty will be considerable as there are no railways and few roads. Access to many of the mines is obtained from the sea-coast by country boats on tidal rivers. Moreover, the greater part of the work of mining in open excavations is carried on during the rainy season when touring is difficult if not impossible.

## IN SHAFTS (OVERWINDING).

*The Bengal Coal Company, Limited's Chanch coal mine.*

No. 1 Pit Chanch is 16 feet in diameter and 550 feet in depth. It is fitted with cages for winding purposes, and the maximum number of persons allowed to travel in the cage is six. The winding engine is directly coupled to the drum, and safety hooks are fitted to the cages. The distance between the detaching hook and the detaching bell in the headgear is 24 feet. The engine is not fitted with any automatic contrivance to prevent overwinding.

At 8-30 P.M. on 24th January twelve persons were being lowered in the cage when an overwind took place and the descending cage struck the bottom of the shaft with such violence that ten of its occupants were more or less seriously injured. The ascending cage was unoccupied; it came to rest about 10 feet above the surface landing platform.

As not infrequently happens on such occasions the winding engine-man and the banksman absconded. Within a few days, however, they returned to duty and their evidence was recorded. From tests made immediately after the accident the winding engine and brakes appeared to be in perfect order. The Inspector was of the opinion that the overwind was due to a slight error of judgment or a momentary lapse of the winding engine-man rather than to negligence. The man had been driving the engine for seven years and had the reputation of being a careful driver. This was the first mistake he had made.

As stated above the maximum number of persons allowed to travel in the cage is six and notices to that effect were duly posted at the top and bottom of the shaft, both in English and in the vernacular. For allowing a number of men in excess of the permitted maximum number to enter the cage the banksman was prosecuted, convicted and punished.

## IN SHAFTS (WHILST ASCENDING OR DESCENDING BY MACHINERY).

*No. 103.—The Burrakur Coal Company, Limited's, Katras coal mine.*

Workmen were being lowered and raised in the cages at a winding shaft 320 feet deep. When the engine-man applied the brake to the drum of the winding engine the lining of the brake became detached and the brake becoming ineffective, he lost control of the engine. The descending cage struck the landing platform at the bottom of the shaft with such force that 5 of the 16 occupants were severely injured. One of them succumbed to his injuries. The ascending cage was arrested in the headgear by the detaching hook, and its six occupants escaped without injury.

The lining of the brake was of Ferodo material. Its attachment to the brake-block was by means of spikes and bamboo rivets, and this is the recognised and approved method of securing the lining. After the accident the ends of the lining were turned back and securely bolted to the brake-block, thus avoiding any possibility of the lining being torn away from the block.

## IN SHAFTS (MISCELLANEOUS).

170. 100.—*Messrs. South Basra Coal Company's Pure Kujama coal mine.*

A miner attempted to cross the bottom of a winding shaft while the cages were in motion. He was struck by the descending cage and fatally injured.

A bye-pass for convenience in passing from one side of the shaft to the other had been provided, but the entrances to it were 20 feet distant from the shaft. The injured man had been employed for no more than a few days, and it is quite probable that he crossed the bottom of the open shaft because he did not know of the bye-pass. At the Inspector's request the manager agreed to make another bye-pass close to the bottom of the shaft—which is the proper and most convenient place for a bye-pass.

## BY EXPLOSIVES.

170. 113.—*The Lodna Colliery Company (1920) Limited's Ningah coal mine.*

In this accident thirteen persons were killed and three were injured by an explosion of country gunpowder on the surface.

At the distributing-room close to No. 3 pit a storekeeper issued to four shot-firers some 21 lb. of country gunpowder contained in sealed tin cartridges each containing 12 ounces of gunpowder. As it was a dark night and raining heavily the gunpowder was placed in a wooden box and taken into an adjacent godown for distribution and placing in tin canisters preparatory to its being taken underground. During the temporary absence of the shot-firers the gunpowder was ignited and sixteen persons who had taken shelter in the godown were severely burnt. Thirteen of them succumbed to their injuries. It was presumed that someone had been smoking and had set fire to the powder.

Criminal proceedings were instituted against three of the shot-firers, and one of them was convicted of negligently omitting to take such order with an explosive substance in his possession as is sufficient to guard against any probable danger to human life from that substance (Section 286—Indian Penal Code).

After the accident a distributing office with adequate facilities for ingress and egress, and lighted by electricity, was provided as an adjunct to the drying-room.

## BY IRRUPTION OF WATER.

170. 120.—*The Tata Iron and Steel Company, Limited's Jamadoba coal mine.*

In the underground workings of this colliery a gallery (marked C on Plan B) was being driven in the neighbourhood of certain galleries which were being used as a lodgment for water. Although the gallery was believed to be not less than 114 feet distant from the waterlogged galleries yet it was actually so close to them that the pressure of the accumulated water broke down the thin partition between the galleries and made a connecting hole  $1\frac{1}{2}'$  long, 3' wide and  $2\frac{1}{4}'$  high.

At the time of the accident there were seventeen persons in the workings concerned. The miners working in the galleries C and E were swept off their feet but sustained no injuries more serious than bruises and scratches. Two women who at the time were somewhere in the neighbourhood of the point D were carried away by the force of the water, and their bodies were found at the points marked with crosses on the plan.

It was estimated that the capacity of the waterlogged galleries was 47,400 cu. feet and that the quantity of water impounded was 296,250 gallons. The head of water was 35 feet and the pressure would, therefore, be about 15 lb. per square inch.

On none of the plans of the mine was there any indication that the small narrow gallery A B had been driven. From the evidence available it appears to have been driven about 1920, and as the galleries remained full of water from that date up to the time of the accident the omission could not be detected. Of the two surveyors who appear to have been responsible for this omission, one resigned in 1920 and the other died in 1926. Between 1920 and 1923 there were five changes of managers. The two managers who successively held charge of the mine in 1920 and 1921 left India some years ago. Under these circumstances responsibility for this accident could not be definitely fixed.

The practice of using old galleries as a lodgment for any large quantity of water is to be deprecated. If it is unavoidable the workings should first be carefully surveyed, and the greatest care should be taken to ensure that the whole of the workings concerned are shown accurately on the mine plan.

#### HAULAGE.

##### *No. 122.—The Burrakur Coal Company, Limited's Katras Coal mine.*

A train of eight loaded tubs was being hauled up a gradient of 1 in 5 when a drawbar link failed and the last tub ran wild. A pump-minder who was sleeping by the side of the line was struck and fatally injured by coal thrown from the tub when it overturned.

The drawbars used carry a triangular link at one end and a similar link with a forged hook at the other end. Each end of the drawbar is bent round the link so that it is impossible to examine one side of the link. In this case the weld of the link was hidden by the metal of the drawbar. An examination of the link and of links of other drawbars showed that the welds had not been properly made.

The drag was of the common type and made from a piece of 36 lb. section rail. It was attached to the link of the drawbar and not to the rear axle of the tub. Although this type of drag is in general use throughout the coalfields it does not seem to be a suitable appliance. Mr. Barraclough, Inspector of Mines, made tests with the drag attached to an empty tub and found that:—

- (1) when the tub passed over a crossing the end of the drag was liable to be thrown over the rail of the main line, in which

position it was useless. Unless there was something at the side of the track to deflect the tail of the drag over the rail, it was liable to trail in this position for a considerable distance. This occurred when the drag was attached either to the link of the drawbar or to the rear axle of the tub; and

- (2) when the drag was attached to the link of the drawbar, and with a drag having an effective length of 20 inches, the tub was liable to jump the drag without being derailed.

He was of the opinion that the rear axle is the most effective and suitable point of attachment, and that at the point of attachment some means should be provided to prevent the tail end of the drag being thrown over the rails of the haulage line.

Mr. Barraclough sketched and described to the manager a form of drag which in his opinion should prove more effective than the type now commonly used. A drag of this type was subsequently manufactured and proved to be satisfactory in use. A drawing of the drag (Fig. 1) will be found on page 25.

*No. 124.—The East Indian Coal Company, Limited's Kendwadih coal mine.*

A workman was struck and fatally injured by a loaded tub which was being trammed on a road with a slight gradient in favour of the load. Near the inner end of the road the grade was about 1 in 15, and it was the custom to put sprags in the rear wheels of the tubs and to allow them to run uncontrolled one by one as far as if not beyond a siding some 200 feet distant. It was in this siding that the accident took place.

The practice of allowing tubs to run uncontrolled on haulage roads is to be deprecated. After the accident the road was regraded so as to avoid the possibility of tubs running uncontrolled.

*No. 151.—The Raneegunge Coal Association Limited's Kustore coal mine.*

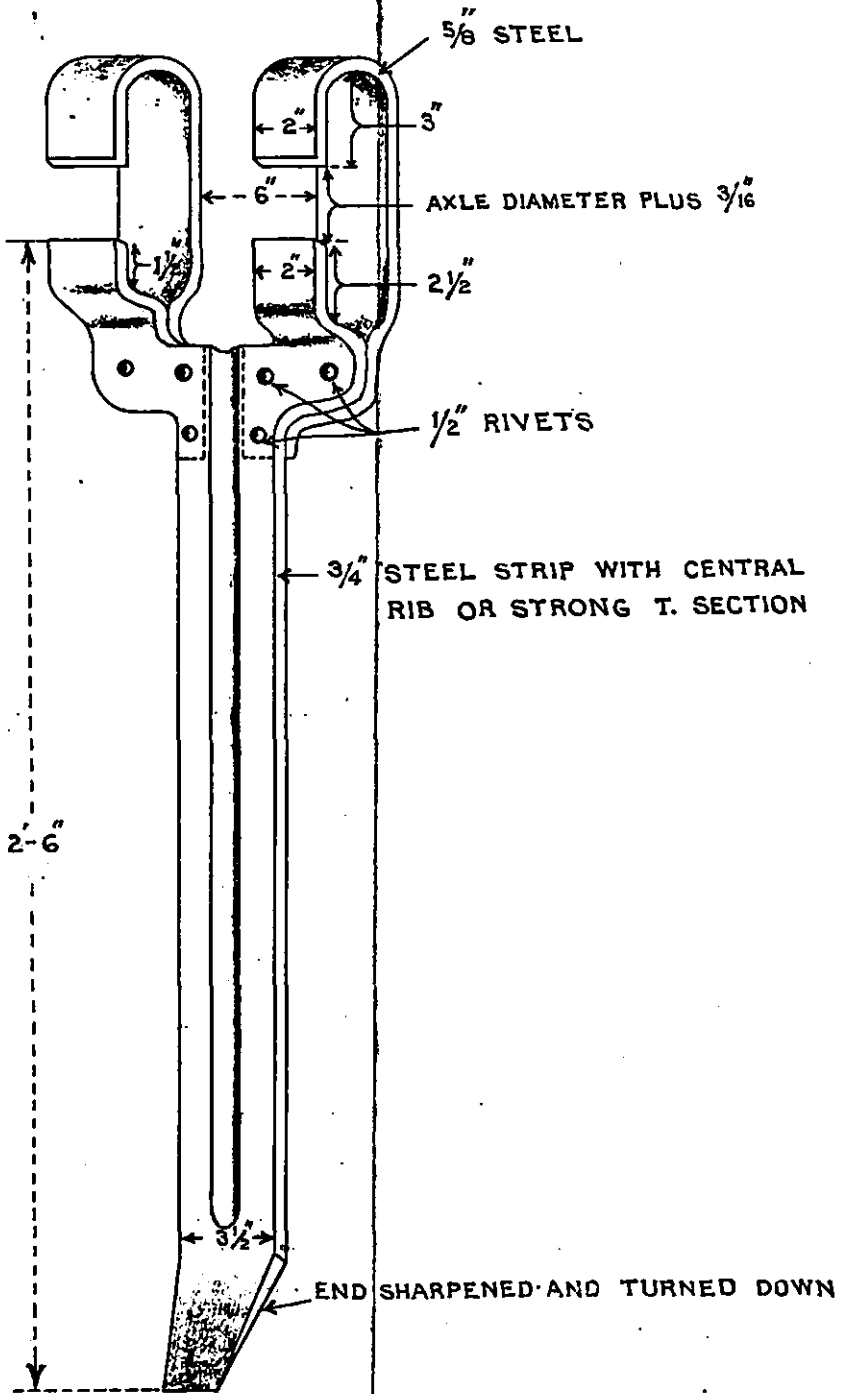
A loaded tub was being lowered down a slope by means of sprags when it became derailed and overturned. A trammer stationed near the foot of the slope for the purpose of removing the sprags was struck by the tub and fatally injured.

The tram line was some 600 feet in length with an average gradient of 1 in 10. The rails had been very badly laid and were bent in many places. They were old and of a light section, and the ballasting was poor. If the line had been properly graded the flat portions could have been eliminated and the road made suitable for use as a gravity incline.

Throughout the greater part of the working of this mine the haulage arrangements are both elaborate and excellent. It is regrettable that in this particular place they were so far below the usual standard. Shortly after the accident took place the tramline was removed.



FIG 1.



IMPROVED TYPE OF DRAG FOR PREVENTING RUNAWAYS ON INCLINES.

## Section IV.—Prosecutions, and Amendments to the Act, Regulations and Rules, and Orders Made Thereunder.

### PROSECUTIONS.

During the year judgments in prosecutions were delivered as follows:—

The manager of the Dhariajoba Colliery Company's Dhariajoba colliery was prosecuted for permitting miners employed on the day shift to go underground before the miners on the night shift had left the mine; and the register-keeper was prosecuted for failing to maintain correctly the register of work persons. They were fined Rs. 20 and Rs. 15, respectively.

The manager of the Khas Kenda Colliery Limited's Khas Kenda colliery was prosecuted for employing persons during hours other than those specified for them; the register-keeper was prosecuted for neglecting to main the attendance register properly. They were fined Rs. 15 each.

The owner of Mahamad Sandhi and Company's Sudamdih colliery was prosecuted for failing to maintain a plan of the workings of the mine; for failing to remove overburden; and for failing to provide gates at the entrances to certain mines. He was fined Rs. 75.

The register-keeper of the Central Salanpur Coal Concern's Central Salanpur colliery was prosecuted for absenting himself from duty during working hours and thereby neglecting to record in the register the correct number of persons going underground. He was fined Rs. 15.

The agent of Srimati Sarat Kumari Debi's Model Brindabanpur colliery was prosecuted for failing to keep discontinued workings of the mines properly fenced. He was fined Rs. 20.

The agent of Messrs. Agarwalla Bedi and Company's Northbrook colliery was prosecuted for failing to appoint a qualified manager. He was fined Rs. 25.

The owners (two) and temporary manager of Messrs. Shewkaran and Sons' Belbaid colliery were prosecuted; the former for failing to appoint a qualified manager, and the latter for managing the colliery without having the prescribed qualifications. The owners were fined Rs. 50 each and the temporary manager Rs. 2.

The owner of Pandit Gian Chand's Gandhala colliery was prosecuted for failing to appoint a qualified manager. He was acquitted.

The owner of Babu Arjun Mavji's Kirkee stone mine was prosecuted for failing to maintain inspection and report books; failing to appoint competent persons as shot-firers, and to record the number of shots fired and misfired and the quantity of explosives used; and failure to keep copies of the abstracts of the regulations and rules. He was fined Rs. 45.

The owner of Babu Santa Prasad Singh's Bhutdoba colliery was prosecuted for failure to submit a plan of a discontinued mine. The case was dropped as the accused could not be traced.

The manager of the Pure Dishergarh Colliery Company's Pure Dishergarh colliery was prosecuted for employing persons during hours other than those specified for them; the register-keeper was prosecuted for failure to keep the register properly. They were fined Rs. 100 each.

The owner, agent and manager of Raja Jagadish Chandra Deo Dhabal Deb's Moulisole steatite mine were prosecuted for failing to keep the sides of the mine secure; to fence machinery and to record daily attendances. The owner was acquitted. The agent was fined Rs. 150, and the manager Rs. 50.

The agent and manager of Messrs. B. B. Chatterjee and Sons' Manjurcola stone mine were prosecuted for failure to send notice of an accident. The agent was fined Rs. 20. The manager was acquitted.

The manager of the Mundalpur Coal Company, Limited's Mundalpur colliery was prosecuted for employing persons for more than twelve hours in a shift, for permitting work persons on the day shift to enter the mine before the persons working in the night shift had come out, and for employing persons during hours other than those specified for them. He was fined Rs. 40.

The owner of Mr. Musunur Venkatasubba Reddy's Ramaprasad mica mine was prosecuted for failing to appoint a manager. He was fined Rs. 25.

The owner of Mr. N. Venkataramana Reddy's Padmini mica mine was prosecuted for failing to fence a discontinued mine. The case was dropped.

The owner and manager of Mr. Mangtural Bagaria's Tasra colliery were prosecuted for employing women underground in excess of 26 per cent. of the total number of persons employed in the mine, for failing to provide a separate means of ingress and egress to the mine, and for failing to maintain a correct record of the commencement and termination of the work of persons employed in the mine. They were fined Rs. 25 each.

The owner and manager of Mr. Mangtural Bagaria's Tasra colliery were prosecuted for failing to fence excavations and to provide a gate at the entrance of a mine. The owner was fined Rs. 25 and the manager was acquitted.

The manager of the Bhagirathi Ghusick Coal Concern's Bhutdoba colliery was prosecuted for failing to make necessary entries in the attendance register and for employing persons during hours other than those specified for them. He was fined Rs. 40.

The owner and agent of Babu Chiranjilal Saraogi's Keshabganj colliery were prosecuted for failing to fence abandoned mines with fences of a permanent character. They were fined Rs. 25 each.

Three shot-firers of the Lodna Colliery Company (1920), Limited's Ningah colliery were prosecuted under Section 286 of the Indian Penal Code for omitting to take such order with an explosive substance as is sufficient to guard against danger to human life. One of the accused was fined Rs. 60 and the others were acquitted.

The agent, the manager and two contractors of the Newton Chickli Collieries Limited's Newton Chickli colliery were prosecuted for employing persons for more than twelve hours in a day; for employing persons in the day shift before withdrawing those working in the night shift; for failing to keep a correct record of the number of hours worked; for

failing to post up at the mine the statement of the percentage of women employed underground. The agent and the manager were fined Rs. 350 each. The contractors were acquitted.

The owners of Messrs. Rai Bahadur Mathura Prasad Motilal and Company's Jamai colliery were prosecuted for failure to submit within the prescribed date a correct plan of the discontinued workings of the mine. They were fined Rs. 50.

The agent, manager and overman of Messrs. Raman Coal Company's Egarcour colliery were prosecuted for failure to keep the sides of the working places in the mine properly secure. The agent was fined Rs. 100. The manager and overman were fined Rs. 20 and Rs. 15, respectively.

The owner and manager of Babu Balai Chand Bhattacharjee's Bagmara colliery were prosecuted for allowing workings to be made within less than 25 feet of a disputed boundary. The owner was fined Rs. 25; and the manager Rs. 50.

The manager of the Ballihari Colliery Company's Ballihari colliery was prosecuted for installing bare wires to supply electric energy to a motor driving an underground pump. He was fined Rs. 100.

The agent of the New Chasnalla Coal Company's New Chasnalla colliery was prosecuted for failing to appoint a qualified manager, and for appointing a sirdar without a sirdar's certificate to make inspections of the mine, and for permitting miners to work under insecure overburden. He was fined Rs. 40.

The manager of Babu K. K. Mukherjee's Bowla colliery was prosecuted for failure to submit notice of an accident. He was fined Rs. 2.

The manager and register-keeper of Babu R. C. Sarkar's North Jharia colliery were prosecuted; the former for permitting miners to commence work in the day shift before those who worked in the night shift had come out of the mine, and the latter for failing to maintain a correct record of the number of persons going underground and returning therefrom daily. They were fined Rs. 10 and Rs. 25, respectively.

The manager of the Equitable Coal Company, Limited's Dishergarh West colliery was prosecuted for failure to remove accumulations of inflammable gas from the workings of the mine, and for not making proper arrangements for the return of unused explosives to the magazine. He was acquitted.

The manager and attendance clerk of the New Kendah Coal Company, Limited's Darulah colliery were prosecuted; the former for employing persons in the mine during hours other than those specified for them, and the latter for failing to make necessary entries in the attendance register. They were fined Rs. 50 and Rs. 15, respectively.

The owner and the manager of Babu Biraj Krishna Mukherjee's New Ghusick colliery were prosecuted for employing work persons in the mine for more than six days in a week; for permitting persons who had already worked during the previous twelve hours to enter the mine for the purpose of work; for failing to appoint supervising staff; for failing to maintain a plan of the workings of the mine up to date within six months; for failing to remove accumulations of gas, and failing to keep in stock sufficient material for the proper carrying out of necessary

operations. The owner and manager were fined Rs. 50 each. The register-keeper was prosecuted for failing to maintain the register correctly. The case against him was dropped as his whereabouts was unknown.

The owners of Messrs. J. N. Supakar and Brothers' Sutikdih colliery were prosecuted for failure to fence an area in which a subsidence of the surface was likely to take place. They were acquitted.

The owner of Mr. P. V. Ramana Reddy's Kamakshi-Degapudi mica mine was prosecuted for failing to fence a discontinued mine. He was fined Rs. 50.

For similar offences the owner of Mr. A. Penchalu Chetty's Chaya-devi Ayyavaripalli mica mine and the owner of Mr. G. Subrahmaniam Naidu's Bhuputhri-Dundigam mica mine were prosecuted. The former was fined Rs. 150, but was acquitted on appeal. The case against the latter was dropped as he could not be traced.

Twenty-two prosecutions were instituted for failure to submit annual returns within the prescribed date. In fifteen cases fines aggregating Rs. 300 were imposed. The other cases were dropped on various grounds.

Information was received of certain prosecutions instituted by mine officials against subordinate staff, as follows:—

The manager of the Equitable Coal Company, Limited's Chowrassie colliery prosecuted a labourer for riding without permission on a set of tubs in motion. He was fined Rs. 7-8-0.

An onsetter of the Bengal Coal Company, Limited's Banksimulla colliery was prosecuted for neglecting to fix the gate fencing the end of a cage in a shaft. He was fined Rs. 50.

A miner of the Burradhemo Coal Company, Limited's Burradhemo colliery was prosecuted for passing through a fence into a goafed area, from which the props had been withdrawn. He was fined Rs. 15.

A banksman of the Burrakur Coal Company, Limited's Mudidih colliery was prosecuted for omitting to attach the safety rope over the haulage sets. He was fined Rs. 4.

The manager of the Hirdagarh Collieries Limited's Ghorawari colliery prosecuted two trammers for allowing a boy to ride on a moving tub. They were acquitted.

The manager of the Amalgamated Coalfields Limited's Bhamori colliery prosecuted a shot-firer for allowing a miner to fire shots without permission. He was fined Rs. 100.

Three miners of the Consolidated Tin Mines of Burma Limited's Taungpila tin and wolfram mine were prosecuted for working without permission in a discontinued shaft. They were fined Rs. 15 each.

The manager of the Assam Railways and Trading Company, Limited's Ledo colliery prosecuted two boiler-firemen for sleeping while on duty. They were fined Rs. 25 each.

A miner of the East Indian Coal Company, Limited's Bararee colliery was prosecuted for striking a fellow workman. The proceedings were dropped as his whereabouts was unknown.

A banksman of the Bengal Coal Company, Limited's Chanch colliery was prosecuted for permitting workmen in excess of the specified maximum number to enter a cage. He was fined Rs. 15.

Three shot-firers and three miners of the Standard Coal Company, Limited's Jharia Khas colliery were prosecuted for disobedience of standing orders in respect of blasting. One of the shot-firers was fined Rs. 60, and another Rs. 2; a miner was fined Rs. 15; the other men were acquitted.

A winding engineman of the Amalgamated Coalfields Limited's Jatachhapa colliery was prosecuted for absenting himself from duty without permission. He was fined Rs. 30.

A fireman of the Amalgamated Coalfields Limited's Jatachhapa colliery was prosecuted for entering an engine-house without authority. He was acquitted.

#### AMENDMENTS TO THE INDIAN MINES ACT AND TO THE REGULATIONS, RULES AND BYE-LAWS UNDER THE ACT, AND ORDERS MADE THEREUNDER.

In Notifications Nos. 583-Com. and 485-VII-M-1-Com., dated the 30th January and 16th February 1931, respectively, the Governments of Bengal and Bihar and Orissa directed that with effect from 1st April 1932 urinals and latrine accommodation shall be provided on the surface in every coal mine in accordance with the provisions of rules 3, 4 and 5 of the rules made under Section 30 of the Indian Mines Act, 1923. The notification is reproduced in Appendix IV, Statement No. 3. The notifications have since been cancelled.

By the end of the year bye-laws under Section 32 of the Act had been established at five hundred and five coal mines.

### Section V.—General Remarks.

#### HEALTH AND SANITATION.

The Asansol Mines Board of Health held eleven ordinary and one special meetings during the year. On 3rd January Dr. L. Sen, M.B., D.P.H., took over charge as Chief Sanitary Officer. The general health of the Settlement was satisfactory, the death rate being 20.52 per thousand calculated on a population of 379,611 persons. The infant mortality rate was 135 per thousand births. There were 620 cases of cholera and 309 deaths and 94 cases of small-pox with 8 deaths, as compared with 453 cases of cholera with 207 deaths and 170 cases of small-pox with 20 deaths during the previous year. The death rates for cholera and small-pox were 0.81 and 0.02 per thousand, respectively. Where cholera occurred the Board's staff carried out various routine measures of disinfection in addition to mass inoculation and administration of the Essential Oils Cholera mixture. As many as 43,316 persons were inoculated with anti-cholera vaccine during the year. As the result of a general appeal sent out to colliery managers the number of vaccinations performed increased from 31,445 to 63,385. Simple lectures on sanitation and hygiene were delivered in all lower and upper primary schools of the Settlement. The Board's propaganda officer delivered lectures illustrated with magic lantern slides in the villages and collieries of the Settlement and also did house-to-house propaganda. The School Medical Officer carried out medical inspection of the school children.

A sample survey on leprosy was carried out by the Leprosy Survey Officer deputed by the Bengal branch of the British Empire Leprosy Relief Association. The survey revealed an infection rate of over one per cent. of the total population. Sanction for the appointment of three midwives in addition to the three already employed was accorded during the year. The scope of the duties of the midwives was enlarged so as to embrace anti-natal visits, free maternity service, post-natal care and health talks to the women in the villages and collieries and the training of indigenous dais. For conservancy work in the more important bazar areas of the Settlement a conservancy staff of 25 sweepers was engaged by the Board.

The Jharia Mines Board of Health held twelve ordinary and ten special meetings during the year. Major C. S. Ryles, Chief Medical Officer, held charge throughout the year. The population of the Settlement was 521,092 persons. The birth rate was 30·97 and the death rate 16·07, as compared with 28·09 and 16·18 in the previous year. There were 618 cases of suspected cholera and 253 deaths, as compared with 520 cases and 196 deaths in the previous year. On the collieries the number of deaths from cholera was no more than 30, as compared with 48 in the previous year. There were 405 cases of suspected small-pox with 37 deaths, as compared with 917 cases with 82 deaths in the previous year. In the Board's laboratory 411 samples of food were analysed and 161 found to be adulterated. Prosecutions were ordered in nearly all cases of adulteration. In respect of housing there was some improvement, but owing to the depressed state of the coal trade the building programme has been temporarily postponed. After a year's work the Board's maternity and child welfare scheme may be said to have proved distinctly successful. Centres were formed and midwives were appointed by mine-owners at four different places, where the work of the midwives was supervised by the Board's Maternity Supervisor. The extension of the sphere of work has been sanctioned by the Board.

Statistics of rainfall in the Eastern Coalfields have been recorded as follows:—

	Rainfall in inches.	
	1931.	1930.
Jharia Coalfield—		
Jealgora . . . . .	44·72	65·11
Topchanchi . . . . .	56·28	64·24
Raniganj Coalfield—		
Asansol . . . . .	57·34	53·06
Giridih Coalfield—		
Giridih . . . . .	52·17	62·01

#### AMBULANCE WORK.

As in former years classes in First-Aid to the injured organised by the Inspectors of Mines were held in the coalfields. At the nineteen centres in the Jharia Coalfield 283 students attended the lectures and 187 First-Aid certificates were awarded. At seven centres in the Raniganj Coalfield 128 students attended the lectures and 106 obtained First-Aid certificates.

Instruction in First-Aid was also given in all mining centres of importance in other parts of India.

## MINING EDUCATION.

At the Indian School of Mines the total number of students on the roll at the commencement of the session was 71, of whom 14 were in the first year, 10 in the second year, 25 in the third year and 22 in the fourth year. The results of the examinations were as follows:—

Diploma or Certificates.	No. of candidates.	No. of successful candidates.
Diploma of Associateship in Geology . . . . .	4	4 (3 in Class I and 1 in Class II).
Diploma of Associateship in Mining Engineering . . . . .	18	17 (10 in Class I, 6 in Class II and one passed on re-examination).
Certificate in Geology . . . . .	5	5
Certificate in Metal Mining . . . . .	8	8
Certificate in Coal Mining . . . . .	16	15

The mine surveying camp was pitched at Pootkee colliery in the Jharia coalfield during the month of November, and 42 students of the second, third and fourth years were in attendance. Visits were paid to the mica mines of Kodarma, the limestone quarries of Katni, the manganese mines of the Central Provinces and the copper mines of Singhbhum. In addition many visits were paid to local collieries and places of geological interest in the neighbourhood. Three graduates of the School appeared at the examination for mine surveyors' certificates held by the Board of Examiners under the Indian Mines Act, and they headed the list of successful candidates.

The Benares Hindu University, in 1923, established two 4-year courses leading to the degrees of B.Sc. in Mining and B.Sc. in Metallurgy. In July 1931 the total number of students on the roll was 62, of whom 24 were in the first year, 18 in the second year, 4 in the third year mining, 4 in the fourth year mining, 9 in the third year metallurgy and 3 in the fourth year metallurgy. Two students passed the final examination for the degree of B.Sc. in Mining. Up to date the total number of mining graduates is 12. During the year visits were paid to coal mines, copper mines, manganese mines, mica mines, limestone quarries, steatite quarries and to steel, iron and copper works, railway workshops and brickworks. A geological camp was held at Jubulpore and a survey camp was held in the Karanpura coalfield. During the summer vacation 25 students were sent to various mines and works for practical training.

The Mining Education Advisory Board continued to control the three-year courses of evening instruction for mining students instituted by the Governments of Bengal and Bihar and Orissa. The lecture centres are at Raniganj and Sitarampur in the Raniganj coalfield, and at Jharia and Sijua in the Jharia coalfield. In the Raniganj coalfield the teaching staff consisted of Mr. Nirranjan Ghosh assisted by Babus Nirmal Chandra Sarkar and Dharendra Nath Sarkar, and in the Jharia coalfield Mr. Hemanta Kumar Nag assisted by Babus Umapati Prosad and Basanta Kumar Palit. During the session 1930-31 the total number of students enrolled was 135, of whom 59 attended the classes of the third stage. Of these 59 students, 17 appeared at the final examination



and 13 were successful. The examiners were Dr. D. Penman and Mr. J. H. Lang. Courses of ten lectures were delivered in Hindi to overmen and sirdars at six centres in the Jharia coalfield and at one centre in the Raniganj coalfield. Similar lectures in Bengali were delivered at twelve centres in the Raniganj coalfield. The lecturers were Babus S. N. Bhattacharjee, B. K. Bose, P. R. Chakraverty, B. K. Mukherjee, P. Chakravarty and B. M. Bagchi in Bihar and Orissa and Babus T. S. Ghatak, B. B. Banerjee, S. K. Rakshit, J. G. Banerjee, P. C. Pandit, A. K. Chatterjee, H. C. Roy, A. H. Tewary, K. M. Chatterjee, D. P. Naug, B. Biswas and G. C. Chakravarty in Bengal. At the Jharia and Sitarampur lecture halls special demonstrations in gas testing were given by the mining lecturers. From August to November special classes in mine surveying were held in both coalfields.

#### MINING AND GEOLOGICAL INSTITUTE OF INDIA.

The total membership, including subscribers, of the Mining and Geological Institute of India at the close of the year was 311. In addition to the annual meeting four ordinary general meetings were held for the reading and discussion of papers, whilst one meeting took the form of a lantern lecture. Excursions were made to the Indian Copper Corporation, Limited's Mosaboni copper mine at Ghatsila in the Singhbhum district, to the collieries, bye-product plant, power house and works of the East Indian Railway at Giridih, and to the Bengal Paper mills at Raniganj in the district of Burdwan.

Five parts of the Transactions were published. The Government of India prize for the best paper published during the year and the Institute gold medal were awarded to Dr. F. G. Percival for his paper on "The Iron Ores of Noamundi"; the silver medal was awarded to Mr. E. R. Gee for his paper entitled "A Correlation of the Coal Seams of the Raniganj Coalfield"; and the bronze medal was awarded to Professor C. Forrester for his paper on "Calorific Value of Jharia Coals as calculated by Formulae". The Pickering medal presented by the Institute for the best student in mining at the Indian School of Mines during the 1929-30 session was awarded to Mr. Dasondhi Ram Bagroy, and the Hayden medal for the best student in geology was awarded to Mr. Abdul Majeed. Mr. J. Mackie was reappointed to represent the Institute on the governing body of the Indian School of Mines, and Dr. Cyril S. Fox was appointed to serve on the Council of the Institute of Fuel, London. Mr. J. Thomas continued to serve on the Coal Dust Committee; he and Mr. C. A. John Hendry represented the Institute on the Empire Council of Mining and Metallurgical Institutions in London from July to October, whilst on their return to India Sir Edwin Pascoe and Mr. G. C. Leach were appointed to replace them.

**THE NATIONAL ASSOCIATION OF COLLIERY MANAGERS, INDIAN BRANCH;  
THE INDIAN MINE MANAGERS ASSOCIATION; THE INDIAN COLLIERY  
EMPLOYEES ASSOCIATION; AND THE TATA COLLIERIES' LABOUR ASSO-  
CIATION, JAMADOBA.**

The number of members of the National Association of Colliery Managers, Indian Branch, was 107. Some of the subjects dealt with by the Council during the year were:—(1) the number of lepers working

in and about collieries; (2) liability for the cost of diversions of public roads; (3) suggested withdrawal of female labour from underground workings; (4) proposed new regulations under the Mines Act; and (5) provision of urinals and latrines at collieries. Mr. J. T. Caldwell represented the Association on the Jharia Mines Board of Health; Mr. George Caldwell on the Asansol Mines Board of Health; Mr. A. Farquhar on the Coal Dust Committee; and Mr. G. G. Carapiet on the Railways and Collieries Advisory Board, of which he was chairman.

The membership of the Indian Mine Managers Association increased from 206 to 211. Among the subjects dealt with by the Council were:—(1) legislation for the protection of public roads and (2) alleged defects in the charges for water made by the Jharia Water Board.

In the annual report of the Indian Colliery Employees Association the number of members of the Association is said to exceed 3,000 including more than 2,000 manual workers. The Association claims to have dealt with more than 150 disputes, most of which were settled by negotiation. As mentioned on a previous page the Association negotiated on behalf of the miners on strike at Bhalgora and Simlabahal collieries in the Jharia coalfield.

The Tata Collieries' Labour Association is a Trade Union organisation of the wage-earners of Tata's collieries in the Jharia coalfield, and was established on 27th April 1930; it is registered under the Trade Unions Act, 1926, and is officially recognised by the management of the collieries. Some 1,500 of the 3,000 workmen employed at Jamadoba colliery are said to be members of the Association. The following are extracts from the annual report of the Association:—"As the result of the activities of the Association \* \* \* \* \* cases of dismissals have greatly decreased \* \* \* \* \* and conditions of service have improved \* \* \* \* \*. The practice of paying bonus on account of surplus coal to the supervising staff has been abolished and the miners are paid the full value of the surplus coal. An Arbitration Board has been set up to deal with cases of trouble or friction between Labour and Labour outside the hours of employment. Forty-one cases were reported to the Board. Both parties agreed to abide by the decision of the said Board. Usually all these cases have been settled by compromise."

#### Mining Boards in Bengal, Bihar and Orissa and the Central Provinces.

The Bengal Mining Board held two meetings during the year. Among the subjects discussed at the meetings and by correspondence were (a) proposed revision of the publications entitled "Dictionary of the Economic Products of India" and "The Commercial Products of India"; (b) recommendation adopted by the Twelfth International Labour Conference, 1929, concerning the prevention of industrial accidents; (c) proposed provision of latrine and urinal accommodation at coal mines on and from 1st April 1932; and (d) proposed amendments of the Indian Coal Mines Regulations, 1926. The non-official members of the Board were Messrs. P. S. Keelan, C.I.E., Bhudev Prasanna Mukherjee and A. L. Ojha.

The non-official members of the Coal Mining Board in Bihar and Orissa were Messrs. J. B. Argyle, A. L. Ojha and J. Mackie. The Board held one meeting during the year. Among the subjects dealt with at the meeting and by correspondence were (a) recommendation adopted by the Twelfth International Labour Conference, 1929, concerning the prevention of industrial accidents; (b) proposed provision of latrine and urinal accommodation at coal mines on and from 1st April 1932; and (c) the proposed amendments of the Indian Coal Mines Regulations, 1926.

The non-official members of the Mining Board for mines other than coal mines in Bihar and Orissa were Messrs. G. A. Young and G. G. Dobbs.

The Central Provinces Mining Board did not meet during the year. Among the matters dealt with by correspondence were draft amendments of the Indian Coal Mines Regulations, 1926. The non-official members of the Board were Mr. R. S. Davies, Mr. L. H. Bartlett, Rai Bahadur Mathura Prasad and Rai Sahib Radeshiam Wahi.

#### COAL-DUST COMMITTEE.

The Coal-Dust Committee held one meeting during the year, and in addition visited three collieries in the Jharia and Raniganj coalfields. This was in continuation of their programme of visiting collieries in the two principal coalfields for the purpose of examining the conditions with respect to the risk of coal dust explosions. Under the direction of Mr. N. Barraclough, Inspector of Mines, a series of experiments was carried out at a disused colliery in the Jharia coalfield. These experiments were designed to test the possibility of an ignition of coal dust under practical conditions. Towards the end of the year a draft of the third and final report was prepared.

#### BOARD OF EXAMINERS.

Seven meetings of the Board of Examiners were held during the year. The non-official members of the Board were Messrs. J. Mackie, N. N. Sarkar and J. B. Wardlaw. The local examiners appointed were Messrs. A. Farquhar and D. M. Archibald for the examination for coal mine managers' first class certificates; Messrs. J. G. Cunningham, W. Robb, L. Millar and S. C. Ghosh for the examination for coal mine managers' second class certificates; and Mr. A. Mack for the examination for coal mine surveyors' certificates. Messrs. J. H. Lang and N. Barraclough, Inspectors of Mines, were the official examiners and acted as secretaries.

Nine first class and one second class certificates of competency to manage a coal mine, and one surveyors' certificate were granted in lieu of British certificates of the same classes. At the examination for coal mine managers' certificates held at Dhanbad in February 67 candidates sat for first class certificates and 85 for second class certificates. Three certificates of the first class and ten of the second class were granted. At the examination for coal mine surveyors' certificates of competency held at Dhanbad in November there were 38 candidates, of whom 8 were successful.

Two hundred and ninety-seven persons attended examinations for coal mine sirdars' certificates of competency and 245 certificates were granted. Out of 256 holders of sirdars' certificates examined in gas testing 136 were successful and their certificates were duly endorsed to that effect. 721 holders of sirdars' certificates appeared for re-examination in eye-sight and hearing; 655 were successful and their certificates were duly endorsed. Four sirdars' certificates were granted in lieu of British certificates of the same class. Under Coal Mines Regulation 49 the certificates of four sirdars were suspended for periods varying from one and a half months to six months. During the year 17 duplicate sirdars' certificates and 64 duplicate discs were issued.

#### OFFICIAL DUTIES, 1931.

Mr. R. R. Simpson was Chief Inspector throughout the year.

Mr. J. H. Lang held charge of No. 2 Circle throughout the year.

Mr. W. Kirby held charge of No. 1 Circle throughout the year.

Mr. N. Barraclough, Inspector, was on leave out of India from 22nd March to 21st October.

Mr. H. M. Mitra was Electric Inspector throughout the year.

Messrs. G. S. Cameron, N. G. Chatterjee, H. K. Chatterjee and A. Young, Junior Inspectors, were on duty throughout the year. Mr. J. F. Waters, Junior Inspector, was on leave out of India from 1st January to 1st July.

The number of coal mines worked during the year was 540 which is 9 less than in the previous year. The number of metalliferous (including stone, etc.) mines at work was 877, as compared with 1,120 in the previous year.

During the year 998 mines were inspected, many of them were inspected several times; 2,558 separate inspections were made. The cause and circumstances of nearly all the fatal accidents and serious accidents of importance, and all complaints of breaches of regulations and rules were investigated. Many inspections were made at the invitation of mine-owners, superintendents or managers desirous of obtaining advice on safety matters. In the major coalfields a large proportion of the time of the Inspectors is occupied in investigating cases of actual or threatened damage to dwelling houses and roads by reason of the underground workings of coal mines.

Orders were issued as follows:--

Section, Regulation or Rule.	Number of orders.
Under Section 19 (2) . . . . .	9
Under Coal Mines Regulation 23 . . . . .	4
Under Coal Mines Regulation 50 . . . . .	1
Under Coal Mines Regulation 68 . . . . .	1
Under Rule 14-A of the rules made by the Governments of Bengal and Bihar and Orissa . . . . .	7

Exemptions, partial or complete, and permissions were granted as follows:—

Regulation.	Number of cases.
Under Coal Mines Regulation 53 . . . . .	3
Under Coal Mines Regulation 106 . . . . .	3
Under Coal Mines Regulation 116 . . . . .	2
Under Coal Mines Regulation 123 . . . . .	2

Information was received of nine underground fires, two subsidences caused by collapses of underground workings, two irruptions of water into mines and two ignitions of inflammable gas.

The number of original cases under the Land Acquisition (Mines) Act, 1885, at the end of 1931 stood at 645, twenty-nine of which were cases dealt with during the year. There were three applications for modifications of restrictions and three complaints of violations of restrictions, all of which were dealt with. The Act applies to Bengal and Bihar and Orissa only. In other provinces where Government owns the minerals, Local Governments were advised as to the restrictions necessary in cases where mine-owners have sought permission to work minerals beneath railways, villages, etc.



I have the honour to be,

SIR,

You most obedient servant,

R. R. SIMPSON,

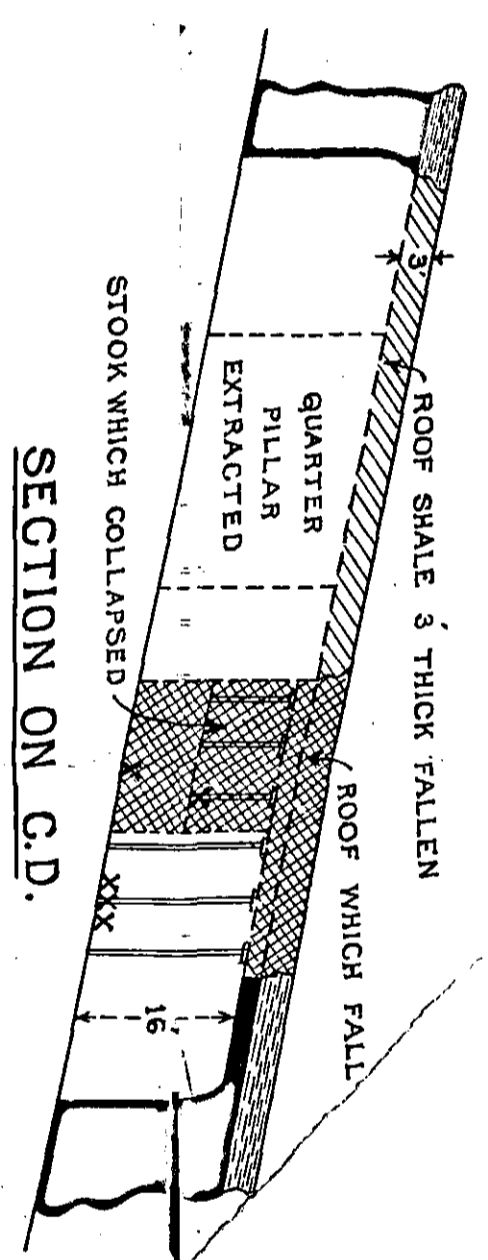
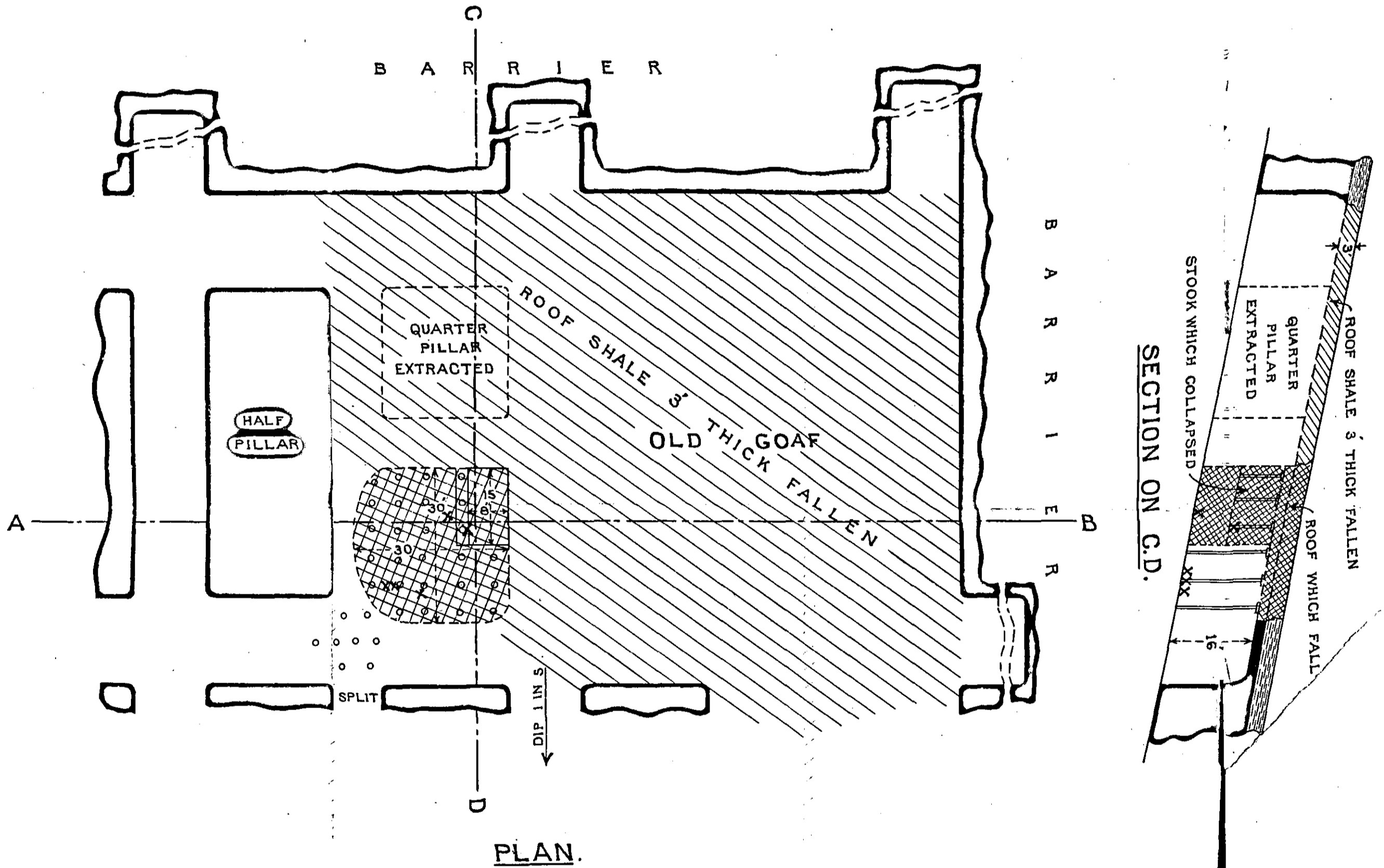
*Chief Inspector of Mines in India.*

# PLAN & SECTIONS ILLUSTRATING REPORT ON FATAL ACCIDENT BY FALL OF ROOF

AT

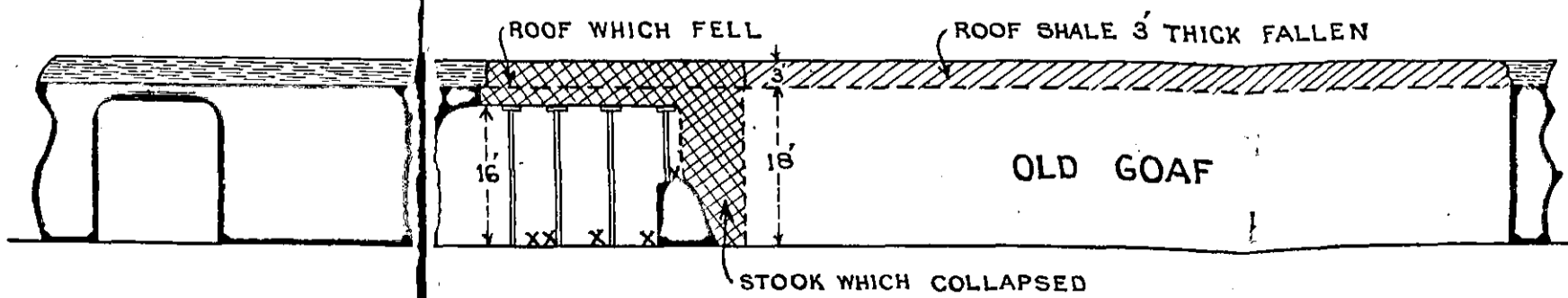
## THE BENGAL COAL Co, LTD'S, SODEPUR (9 & 10 PITS) MINE.

SCALE 1 INCH = 20 FEET.



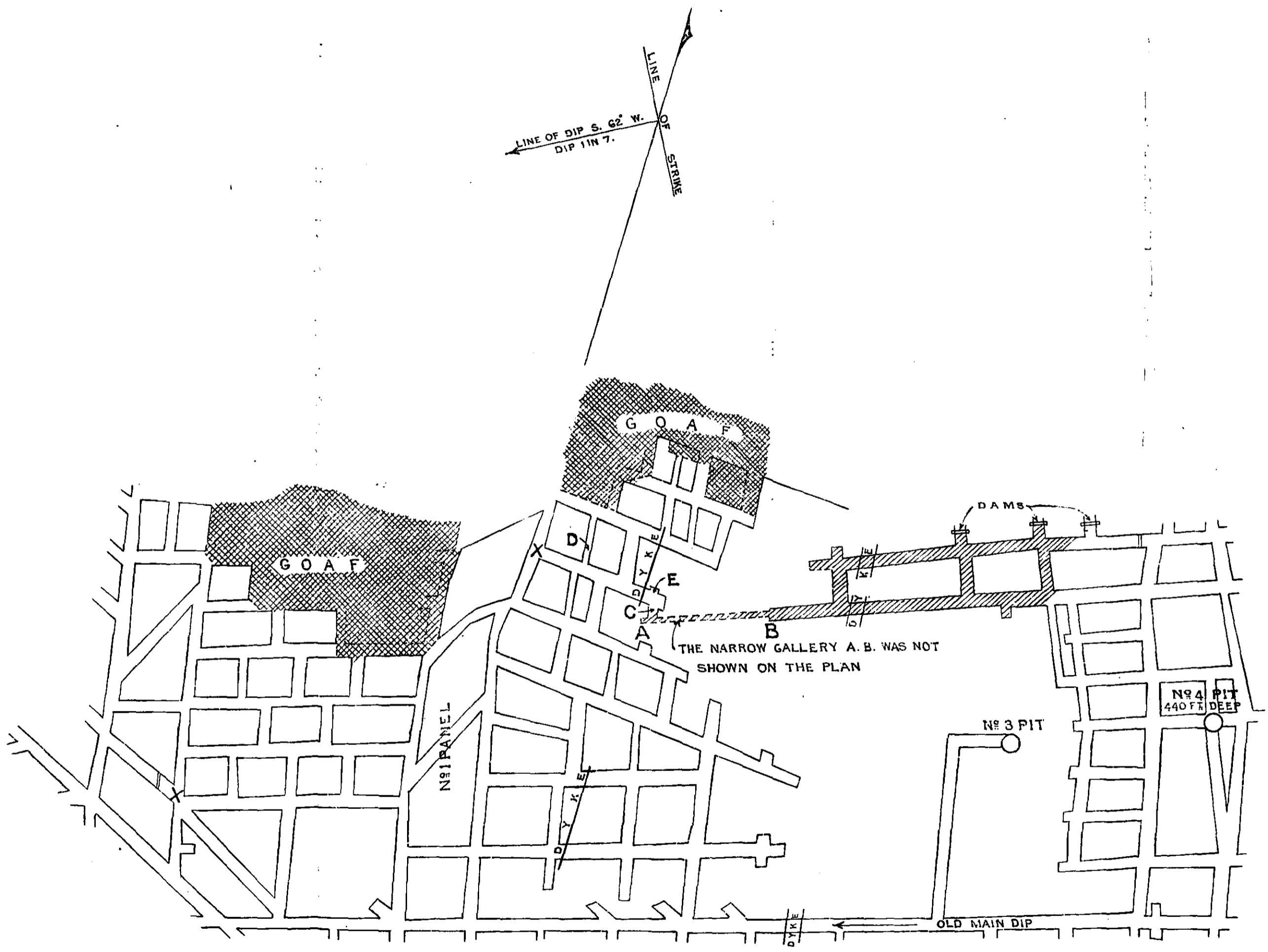
### REFERENCES

- AREA OF ROOF WHICH FELL ..... [hatched pattern]
- BODIES OF DECEASED ..... XXXXX



SECTION ON A.B.

PLAN ILLUSTRATING REPORT ON  
FATAL ACCIDENT BY IRRUPTION OF WATER  
AT  
THE TATA IRON AND STEEL Co, LTD'S, JAMADOBA MINE.  
SCALE 1 INCH = 100 FEET



REFERENCES.

- BODIES OF DECEASED ..... X X
- GALLERIES FULL OF WATER ... [hatched symbol]

## STATISTICS OF MINES.

Table

Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of							
			Underground.							
			Males.						Females.	Total Males and Females.
			Overmen and Sirdars.	Coal-cutters.	Loaders.	Other skilled labour.	Other unskilled labour.	Total Males.		
Assam	Lakhimpur, Makum coalfield	Tons. 236,965	87	281	251	252	655	1,470	...	1,476
	Naga Hills, Nazira "	84,963	23	51	64	51	190	384	...	384
	Sibsagar . . . . .	850	1	3	2	...	2	8	...	8
	Total . . . . .	274,378	110	285	317	303	853	1,868	...	1,868
Baluchistan	Quetta-Pishin Sor Range coalfield.	9,051	8	33	70	1	...	112	...	112
	Sibi Khoet coalfield . . . . .	3,821	5	20	33	...	...	57	...	57
	Total . . . . .	12,872	13	53	102	1	...	169	...	169
Bengal	Bankura	7,230	7	30	17	1	15	70	13	83
	Birbhum	1,019	3	5	3	1	1	13	2	15
	Burdwan	5,801,935	743	12,300	4,374	3,468	4,626	25,508	5,581	31,089
	Total . . . . .	5,810,184	753	12,335	4,394	3,468	4,642	25,591	5,596	31,187
Bihar and Orissa.	Manbhum—Raniganj coalfield (part of)	tons. 622,454	108	2,015	300	329	950	3,607	824	4,631
	Jharia "	9,699,511	1,165	17,839	6,761	4,545	5,962	36,282	7,907	44,249
	Hazaribagh—Jharia coalfield (part of)	55,528	7	113	56	20	24	220	45	265
	Bokaro "	1,666,597	38	643	305	163	224	1,572	203	1,775
	Girdih "	713,133	161	3,363	480	231	686	4,370	844	6,728
	Karanpura "	461,608	36	631	64	69	74	1,074	268	1,342
	Ranehi—Karanpura coalfield (part of)	70	...	6	...	2	4	14	5	19
	Falamau—Dalkonganj coalfield . . . . .	411	...	...	...	...	...	...	...	...
	Carried over . . . . .	12,216,310	1,515	25,001	8,024	5,358	7,050	47,648	10,151	57,999



**DIX I.**  
**AND MINERALS.**

**No. I.**  
**year 1931 at mines under the Indian Mines Act.**

persons employed daily in and about the mines.

Overmen and Bharas.	Open workings:							Total - Underground and Open workings.	Surface.						Grand Total.
	Males.								Males.						
	Coalmen.	Loaders.	Other skilled labour.	Other unskilled labour.	Total Males.	Females.	Total Males and Females.		Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.	Females.	Total Males and Females.	
A.L. Coal 14	77	116	77	314	598	131	719	2,195	46	123	388	566	110	676	2,871
...	...	...	...	...	...	...	...	384	15	80	180	385	5	240	624
...	...	1	1	...	...	...	...	11	...	...	...	...	...	10	21
15	77	117	78	314	601	131	732	2,590	63	196	551	811	115	926	3,516
...	...	...	...	...	...	...	...	113	1	...	28	21	...	21	133
1	4	3	...	...	...	...	...	65	...	...	...	...	...	...	68
1	4	3	...	...	...	...	...	177	1	...	20	21	...	21	198
1	6	...	1	2	10	4	14	97	13	5	3	20	10	30	127
...	...	...	...	...	...	...	...	15	1	...	4	8	...	14	29
8	141	9	54	800	573	456	1,029	32,117	1,410	3,100	4,071	9,490	2,870	12,360	42,487
9	127	9	55	383	533	480	1,043	33,539	1,432	3,108	4,973	9,518	2,805	13,313	44,643
4	32	11	5	16	66	31	97	4,728	160	356	743	1,269	468	1,736	6,464
47	513	100	90	318	1,023	533	1,015	45,884	1,789	3,936	10,329	10,024	5,268	21,297	67,181
...	...	...	...	...	...	...	...	265	17	29	98	154	71	225	490
102	2,001	680	115	1,804	5,402	3,108	8,510	10,235	264	645	1,580	2,450	1,280	3,730	14,024
3	70	17	5	2	97	43	139	5,863	101	141	1,063	1,384	390	1,694	7,555
1	294	168	77	336	666	167	1,033	2,370	76	189	255	560	163	713	2,083
...	...	...	...	...	...	...	...	19	5	...	15	20	11	31	50
1	6	...	...	...	7	2	9	9	...	...	...	...	...	...	9
138	3,611	535	202	2,824	7,620	3,853	11,408	63,401	3,335	5,306	14,118	21,50	7,606	29,615	98,917

APPEN  
STATISTICS OF MINES

Table  
Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of								
			Underground.								
			Males.							Pumps.	Total Males and Females.
			Ovemen and Sirdars.	Coal-cutters.	Loaders.	Other skilled labour.	Other unskilled labour.	Total Males.			
		Tons.								CO	
Bihar and Orissa—contd.	Brought forward	13,315,310	1,515	35,001	8,094	5,348	7,950	47,843	10,151	57,999	
	Sambalpur— Hingir Rampur coalfield	81,320	5	40	30	15	5	95	22	117	
	Sonthal Parganas— Jainty coalfield	50,178	17	171	88	88	30	343	23	365	
	Raniganj coalfield (part of).	92,075	14	317	4	51	28	449	67	516	
	Total	13,398,763	1,551	35,439	8,144	5,443	8,068	48,734	10,263	59,997	
Central Provinces.	Chanda	233,035	23	369	402	84	208	1,646	152	1,798	
	Chhindwara, Pench Valley coalfield.	750,015	64	3,374	647	323	239	3,707	621	4,328	
	Total	973,040	96	3,733	1,049	407	568	5,353	773	6,126	
Panjab	Jhelum, Salt Range coalfield	27,389	27	154	74	64	88	425	...	425	
	Mianwali	22,551	7	43	41	6	23	124	...	134	
	Shahpur	4,629	3	26	...	3	27	88	...	88	
	Total	54,540	36	223	115	63	141	607	...	607	
	Grand Total (Coal) for 1931.	30,514,507	2,558	41,657	14,121	9,714	14,372	82,322	16,633	98,954	
	Ditto of preceding year.	22,683,961	2,941	40,333	12,646	10,450	15,495	81,635	15,227	96,862	
	Difference	-2,169,364	-283	+1,424	+1,475	-736	-1,223	+687	-1,655	-298	

## DIX I—contd.

## AND MINERALS—contd.

## No. I—contd.

year 1981 at mines under the Indian Mines Act—contd.

persons employed daily in and about the mines.

Overmen and Sirdars.	Open workings.							Total Underground and Open workings.	Surface.						Grand Total.	
	Males.						Total Males and Females.		Males.					Total Males and Females.		
	Coal-cutters.	Loaders.	Other skilled labour.	Other unskilled labour.	Total Males.	Females.			Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.	Females.			
AI—contd.	168	3,611	935	293	2,524	7,520	3,683	11,403	69,402	2,385	5,306	14,118	21,909	7,006	29,415	98,817
...	...	...	...	...	...	...	...	...	117	...	39	9	88	20	58	175
...	...	...	...	...	...	...	...	...	365	37	61	37	195	19	214	579
...	...	...	...	...	...	...	...	...	516	30	51	75	157	58	215	781
158	3,611	935	293	2,524	7,520	3,683	11,403	70,400	2,442	5,467	14,390	22,199	7,703	29,902	100,302	
...	...	...	...	...	...	...	...	...	1,798	53	104	376	533	110	643	2,441
...	...	...	2	...	3	3	5	4,333	86	531	708	1,315	535	1,850	6,183	
...	...	...	2	...	3	3	5	6,131	130	625	1,084	1,848	645	2,493	8,624	
...	...	...	...	...	...	...	...	...	425	21	67	156	255	...	355	680
...	...	...	...	...	...	...	...	...	124	7	8	65	80	5	84	309
...	...	...	...	...	...	...	...	...	59	5	5	36	38	...	38	96
...	...	...	...	...	...	...	...	...	607	34	80	259	373	5	378	985
183	3,639	1,064	427	3,200	8,713	4,467	13,180	112,184	4,110	9,478	31,122	34,770	11,363	46,133	158,367	
144	4,577	1,666	523	4,333	11,163	5,637	16,779	116,731	4,367	10,593	24,346	39,308	12,963	52,270	169,001	
+89	-738	-523	-96	-1,122	-2,439	-1,160	-2,599	-4,567	-257	-1,115	-8,16	-4,538	-1,599	-6,137	-10,734	



## DIX I—contd.

## AND MINERALS—contd.

## No. I—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

Open workings.							Total Underground and Open workings.	Surface.					Grand Total.	
Males.					Females.	Total Males and Females.		Males.				Females.		Total Males and Females.
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.			
<b>ORE</b>														
62	1,779	195	155	2,191	1,101	3,292	3,292	88	170	967	1,225	430	1,655	4,947
...	...	...	7	7	...	7	7	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	8	5	26	34	...	34	34
4	...	2	158	164	14	178	178	1	1	11	13	...	13	191
4	...	2	165	171	14	185	185	4	6	87	47	...	47	232
66	1,779	197	820	2,369	1,115	3,477	3,477	92	176	1,004	1,372	430	1,702	5,179
101	2,259	354	467	3,161	1,526	4,707	4,707	131	168	921	1,220	359	1,579	6,286
-35	-480	-157	-147	-819	-411	-1,230	-1,230	-39	+8	+83	+52	+71	+123	-1,107
<b>ORE</b>														
8	236	8	10	262	97	359	359	5	3	33	41	35	96	455
1	...	...	28	29	16	45	45	...	...	...	...	...	...	45
30	512	16	...	538	393	933	933	14	24	202	240	54	294	1,247
31	512	16	28	567	411	998	998	14	24	202	240	54	294	1,392

APPEN  
STATISTICS OF MINES

Table

Number of workers and output of minerals during

Province.	District and Mineral field.	Total Output.	Average number of persons employed							
			Underground.							
			Males.						Females.	Total Males and Females.
			Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.			
		Tons.	<b>MANGANESE</b>							
Central Provinces	Balaghat . . .	119,466	17	981	1	122	521	...	521	
	Bhandara . . .	82,999	..	..	..	..	..	..	..	
	Chhindwara . . .	16,404	4	30	16	5	55	..	55	
	Nagpur . . .	83,475	5	116	5	1	127	..	127	
	Total	302,344	26	527	22	128	703	...	703	
Madras . . .	Bellary . . .	44	..	..	..	..	..	..	..	
	Vizagapatam . . .	5,389	..	..	..	..	..	..	..	
	Total	5,433	..	..	..	..	..	..	..	
Grand Total (Manganese ore) for 1931.		347,373	26	527	22	128	703	...	703	
Grand Total (Manganese ore) for preceding year.		623,678	39	729	50	171	969	...	969	
Difference . . .		-276,305	-13	-202	-28	-43	-266	...	-266	

DIX I—*contd.*AND MINERALS—*contd.*No. I—*contd.*the year 1931 at mines under the Indian Mines Act—*contd.*

daily in and about the mines.

Open workings.					Total Males and Females.	Total Underground and Open workings.	Surface.					Grand Total.		
Males.				Females.			Males.				Females.			
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.				Total Males.	Clerical and supervising staff.	Skilled labour.	Unskilled labour.			Total Males.	
ORE— <i>contd.</i>														
53	753	2	138	941	945	1,886	2,407	28	84	240	302	290	592	2,999
42	392	9	210	1,193	1,195	2,388	2,388	20	11	153	184	126	310	2,698
6	49	8	1	64	70	134	189	7	24	55	86	51	137	326
101	1,272	29	65	1,467	1,269	2,736	2,863	45	36	331	412	210	622	3,485
202	3,006	48	409	3,665	3,479	7,144	7,847	100	105	779	984	677	1,661	9,508
...	...	4	2	6	4	10	10	2	...	2	4	...	4	14
7	423	1	1	432	224	656	656	7	15	35	57	...	57	713
7	423	5	3	438	228	666	666	9	15	37	61	...	61	727
248	4,177	77	450	4,952	4,215	9,167	9,870	128	147	1,051	1,326	786	2,112	11,982
412	5,969	219	741	7,341	5,810	13,151	14,140	224	384	1,639	2,197	1,321	3,518	17,658
164	1,792	142	291	2,389	1,595	3,984	4,270	96	187	588	871	535	1,406	5,676











APPEN  
STATISTICS OF MINES

Table  
Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of persons employed						
			Underground.					Females.	Total Males and Females.
			Males.						
			Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
		Tons.						TIN	
Burma	Amherst . . . .	8½	...	...	...	...	...	...	
	Mergui . . . .	497	4	37	...	16	57	57	
	Tavoy . . . .	2,045	10	811	90	696	1,607	1,607	
	Thaton . . . .	1	...	...	...	...	...	...	
	Grand Total (Tin Ore) for 1931.	3,551½	14	848	90	712	1,684	1,684	
	Grand Total (Tin Ore) for preceding year.	3,001	16	1,047	80	26	1,119	1,119	
Difference . . . .	-449½	-2	-199	+60	+686	+545	+545		
		Tons.						WOLFRAM	
Burma	Mergui . . . .	98	}					} Figures included	
	Tavoy . . . .	671							
	Grand Total (Wolfram Ore) for 1931.	969	...	...	...	...	...	...	
	Grand Total (Wolfram Ore) for preceding year.	1,509	...	...	...	...	...	...	
Difference . . . .	-540	...	...	...	...	...	...		
		Tons.						CHROMITE	
Baluchistan	Zhob . . . .	12,189	6	39	...	...	45	45	

## DIX I—contd.

## AND MINERALS—contd.

## No. I—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

For men and Males.	Open workings.						Total Underground and Open workings.	Surface.						Grand Total.
	Males.				Females.	Total Males and Females.		Males.			Females.	Total Males and Females.		
	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervising staff.	Skilled labour.	Unskilled labour.			Total Males.	
ORE.														
...	...	58	24	82	40	122	122	...	...	...	...	...	...	122
27	708	204	452	1,481	20	1,501	1,558	34	70	16	120	...	120	1,678
34	694	94	1,466	2,238	74	2,362	3,069	97	32	58	167	...	187	4,156
...	...	3	...	3	...	3	3	...	1	...	1	...	1	4
61	1,492	359	1,942	3,854	134	3,988	5,652	131	103	74	308	...	308	5,960
73	3,705	594	1,775	6,147	281	6,878	7,497	166	124	431	731	7	738	8,225
-12	-2,213	-235	+167	-2,293	-97	-2,390	-1,845	-35	-21	-357	+413	-7	-420	-2,285
ORE.														
in those for Tin Ore.														
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
ORE														
8	64	...	...	72	...	72	117	8	...	70	78	...	78	195

APPEN  
STATISTICS OF MINES

Table

Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of persons employed							
			Underground.					Females.	Total Males and Females.	
			Males.							
			Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.			
Bihar and Orissa	Singhbhum . . .	Tons. 2,749	...	...	...	...	...	...	...	<b>CHROMITE</b>
	Grand Total (Chromite Ore) for 1931.	14,938	6	89	...	...	45	...	45	
	Grand Total (Chromite Ore) for preceding year.	30,488	8	161	...	...	169	...	169	
	Difference . . .	-15,550	-2	-122	...	...	-124	...	-124	
Bihar and Orissa.	Manbhum Singhbhum . . .	Tons. 153,686	2 3	10 16	...	367 885	12 1,271	...	12 1,371	<b>COPPER</b>
	Total . . .	153,686	5	26	367	885	1,283	...	1,363	
	Henzada . . .	...	...	...	...	...	...	...	...	
	Grand Total (Copper Ore) for 1931.	153,686	5	26	367	885	1,283	...	1,363	
	Grand Total (Copper Ore) for preceding year.	123,749	4	11	232	476	723	...	723	
	Difference . . .	-29,887	+1	+15	+135	+409	+560	...	+560	

DIX I—*contd.*AND MINERALS—*contd.*No. I—*contd.*year 1931 at mines under the Indian Mines Act—*contd.*

daily in and about the mines.

Open workings.							Total Underground and Open workings.	Surface.						Grand Total.	
Males.					Females.	Total Males and Females.		Males.				Females.	Total Males and Females.		
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervis- ing staff.	Skilled labour.	Unskilled labour.	Total Males.				
<b>ORE—<i>contd.</i></b>															
29	238	26	25	318	337	655	655	5	23	2	30	27	57	712	
37	302	26	25	390	387	727	723	8	23	77	108	27	135	907	
41	327	82	56	506	403	909	1,078	20	30	105	155	35	190	1,268	
-4	-25	-56	-31	-116	-66	-182	-306	-12	-7	-23	-47	-8	-55	-361	
<b>ORE.</b>															
...	...	...	...	...	...	...	12	...	...	12	12	16	28	40	
...	...	...	...	...	...	...	1,271	19	108	229	356	192	468	1,759	
...	...	...	...	...	...	...	1,283	19	108	241	368	148	516	1,799	
...	...	...	7	7	...	7	7	...	...	...	...	...	...	7	
...	...	...	7	7	...	7	1,290	19	108	241	363	148	516	1,506	
...	...	...	9	9	...	9	782	15	100	184	299	67	366	1,098	
...	...	...	-2	-2	...	-2	+558	+4	+8	+57	+69	+81	+150	+708	





DIX I—contd.

AND MINERALS—contd.

No. I—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

Open workings.					Females.	Total Males and Females.	Total Underground and Open workings.	Surface.					Females.	Total Males and Females.	Grand Total.
Males.								Males.							
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.				
<b>MATTIE.</b>															
in those for lead ore.															
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>SPEISS.</b>															
in those for lead ore.															
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>CENTRATES.</b>															
in those for lead ore.															
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>MS.</b>															
120	...	...	550	670	...	670	670	26	...	...	26	...	26	696	

APPEN  
STATISTICS OF MINES

Table  
Number of workers and output of minerals during the

Provinces.	District and Mineral field.	Total Output.	Average number of persons employed						
			Underground.						
			Males.					Females.	Total Males and Females.
			Foremen and Mistes.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
		Cwt.							MI
Bihar and Orissa.	Gaya . . . . .	6,051	37	945	325	265	1,592	...	1,592
	Hazaribagh . . . . .	25,677	293	4,205	224	988	5,660	...	5,660
	Monghyr . . . . .	92	8	44	27	21	100	...	100
	Total . . . . .	31,720	338	5,194	576	1,244	7,352	...	7,352
Madras	Nellore . . . . .	6,893	45	391	86	478	995	...	995
	Nilgiris . . . . .	65	1	8	1	6	16	...	16
	Total . . . . .	6,958	46	399	87	479	1,011	...	1,011
Rajputana	Ajmer-Merwara . . . . .	185	6	34	...	17	57	...	57
	Grand Total (Mica) for 1931.	38,863	390	5,627	663	1,740	8,420	...	8,420
	Grand Total (Mica) for preceding year.	52,519	568	6,415	1,100	2,121	10,284	...	10,284
	Difference . . . . .	-13,656	-168	-788	-527	-381	-1,864	...	-1,864

## DIX I—contd.

## AND MINERALS—contd.

## No. I—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

F o r e m e n a n d M a t e s.	Open workings.							T o t a l U n d e r g r o u n d a n d O p e n w o r k i n g s.	Surface.						G r a n d T o t a l.	
	Males.					F e m a l e s.	T o t a l M a l e s a n d F e m a l e s.		Males.				F e m a l e s.	T o t a l M a l e s a n d F e m a l e s.		
	M i n o r s.	O t h e r s k i l l e d l a b o u r.	O t h e r u n s k i l l e d l a b o u r.	T o t a l M a l e s.	T o t a l M a l e s.				C l e r i c a l a n d s u p e r v i s i n g s t a f f.	S k i l l e d l a b o u r.	U n s k i l l e d l a b o u r.	T o t a l M a l e s.				T o t a l M a l e s a n d F e m a l e s.
CA.																
42	1,810	460	115	1,927	30	1,957	3,549	81	335	65	481	26	507	4,056		
60	791	1	76	928	33	961	6,621	139	315	452	916	290	1,206	7,827		
4	41	1	...	46	2	48	148	18	4	12	34	3	37	186		
106	2,142	462	191	2,901	65	2,966	10,318	248	654	529	1,431	319	1,750	12,068		
33	125	189	175	473	519	991	1,956	56	112	140	308	385	693	2,679		
...	...	...	...	...	...	...	16	1	3	3	7	2	9	25		
33	125	189	175	473	519	991	2,002	57	115	143	315	387	702	2,704		
7	40	2	11	80	16	96	155	...	28	...	28	...	28	178		
146	2,327	603	377	3,458	602	4,055	12,475	305	732	672	1,769	706	2,475	14,950		
176	1,638	317	778	2,909	1,634	4,543	14,827	431	734	930	2,095	1,144	3,239	18,066		
-30	+689	-286	-401	+544	-1,032	-488	-2,352	-126	+58	-268	-326	-438	-764	-3,116		



DIX I—*contd.*AND MINERALS—*contd.*No. I—*contd.*year 1951 at mines under the Indian Mines Act—*contd.*

daily in and about the mines.

Foremen and Mates.	Open workings.						Total Underground and Open workings.	Clerical and supervising staff.	Surface.						Grand Total.
	Males.					Females.			Males.				Females.	Total Males and Females.	
	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.	Total Males and Females.				Skilled labour.	Unskilled labour.	Total Males.	Total Males and Females.			
<b>LT.</b>															
1	14	...	...	15	...	15	741	1	48	199	245	1	246	987	
...	...	...	...	...	...	...	78	...	...	70	70	...	70	143	
...	...	...	...	...	...	...	178	...	7	55	62	...	62	235	
1	14	...	...	15	...	15	987	1	55	321	377	1	378	1,865	
1	10	...	...	11	...	11	1,281	1	50	328	379	1	380	1,661	
...	+4	...	...	+4	...	+4	-294	...	+5	-7	-2	...	-2	-296	
<b>SITE.</b>															
10	88	...	43	141	53	224	224	11	110	...	121	3	124	348	
31	286	...	185	452	292	744	744	16	141	9	166	31	197	941	
-21	-176	...	-92	-311	-209	-520	-520	-5	-31	-9	-45	-28	-73	-593	



## DIX I—contd.

## AND MINERALS—contd.

## No. I—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.															
Open workings.							Total Underground and Open workings.	Surface.						Grand Total.	
Males.					Females.	Total Males and Females.		Males.				Females.	Total Males and Females.		
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervis- ing staff.	Skilled labour.	Unskilled labour.	Total Males.				
TITE.															
4	20	...	9	33	46	79	103	2	6	10	18	16	34	137	
1	26	...	9	36	34	70	92	2	4	2	8	22	30	123	
...	...	12	...	12	...	12	12	1	...	4	5	...	5	17	
1	27	...	...	28	...	28	28	...	...	...	...	...	...	28	
..	...	46	50	96	...	96	273	...	6	...	8	...	6	279	
6	73	58	68	205	80	285	508	5	16	16	37	38	75	583	
9	61	42	84	196	121	317	471	3	8	7	18	42	60	531	
-3	+12	+16	-16	+9	-41	-32	+37	+2	+8	+9	+19	-4	+15	-52	
TE.															
12	39	46	43	140	28	166	166	...	...	...	...	...	...	166	
3	...	42	...	45	18	63	63	1	...	...	1	...	1	64	
15	39	68	43	165	44	229	229	1	...	...	1	...	1	230	





## DIX I—contd.

## AND MINERALS—contd.

## No. I—contd.

year 1930 at mines under the Indian Mines Act—contd.

daily in and about the mines.

Open workings.							Total Underground and Open workings.	Surface.						Grand Total.
Males.					Females.	Total Males and Females.		Males.				Females.	Total Males and Females.	
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervis- ing staff.	Skilled labour.	Unskilled labour.	Total Males.			
<b>TE—contd.</b>														
3	67	26	25	121	...	121	129	3	..	3	3	...	5	134
36	55	...	...	91	...	91	210	...	...	...	...	...	...	210
39	122	26	25	212	...	212	339	3	...	3	3	...	3	344
54	161	114	68	397	44	441	568	3	...	3	6	...	6	574
70	146	123	96	457	68	505	586	1	10	4	15	...	15	601
-16	+15	-9	-30	-40	-24	-64	-18	+2	-10	-1	-9	...	-9	-27
<b>STONE.</b>														
97	396	110	648	1,191	203	1,396	1,396	83	63	104	250	14	264	1,660
3	...	...	12	15	8	23	23	2	...	5	7	4	11	34
100	896	110	660	1,206	213	1,419	1,419	35	63	109	257	18	276	1,694
33	60	2	245	340	...	340	340	1	2	4	7	...	7	347
8	15	14	75	107	12	119	119	5	...	...	5	...	5	124
...	...	...	6	6	...	6	6	...	...	...	...	...	...	6
1	...	3	139	143	...	143	143	...	...	...	...	...	...	143
4	15	17	220	256	12	268	268	5	...	...	5	...	5	273
14	193	8	403	618	551	1,169	1,169	10	28	102	140	42	182	1,351
28	169	192	472	861	1,156	2,017	2,017	21	31	110	162	169	331	2,348
...	48	10	...	58	39	97	97	5	2	18	25	11	36	133
4	...	...	53	57	2	59	59	1	...	35	36	...	36	95
46	410	210	928	1,594	1,748	3,342	3,342	37	61	265	363	222	586	3,927

**APPENDIX**  
**STATISTICS OF MINES.**

**Table**  
Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of persons employed						
			Underground.						
			Males.					Females.	Total Males and Females.
			Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
Punjab	Attock . . . . .	Tons. 138,491	...	...	...	...	...	<b>LIME</b>	
	Jhelum . . . . .	31,530	...	...	...	...	...		
	Rawalpindi . . . . .	71,086	...	...	...	...	...		
	Shahpur . . . . .	3,200	...	...	...	...	...		
	<b>Total</b> . . . . .	<b>244,107</b>	...	...	...	...	...		
	<b>Grand Total (Limestone) for 1931.</b>	<b>562,226</b>	...	...	...	...	...		
	<b>Grand Total for preceding year.</b>	<b>1,148,812</b>	...	...	...	...	...		
	<b>Difference</b> . . . . .	<b>-281,066</b>	...	...	...	...	...		
Bengal . . . . .	Birbhum . . . . .	Tons. 58,790	...	...	...	...	...	<b>STONE (CHIEFLY IGNEOUS)</b>	
Bihar and Orissa.	Gaya . . . . .	32,066	...	...	...	...	...		
	Monghyr . . . . .	11,111	...	...	...	...	...		
	Shahabad . . . . .	37,163	...	...	...	...	...		
	Singhbhum . . . . .	51,387	...	...	6	15	...		
	Sonthal Parganas . . . . .	320,092	...	...	...	...	...		
<b>Total</b> . . . . .	<b>451,839</b>	...	...	<b>6</b>	<b>15</b>	...	<b>21</b>		
Bombay	Bombay . . . . .	43,800	...	...	...	...	...	...	
	Bombay Suburban . . . . .	15,325	...	...	...	...	...	...	
	Hyderabad . . . . .	4,152	...	...	...	...	...	...	
	Kaira . . . . .	20,333	...	...	...	...	...	...	
	Karachi . . . . .	5,707	...	...	...	...	...	...	
	Nasik . . . . .	2,400	...	...	...	...	...	...	
	Suktur . . . . .	327,571	...	...	...	...	...	...	
	Surat . . . . .	53,488	...	...	...	...	...	...	
Thana . . . . .	51,738	...	...	...	...	...	...		
<b>Total</b> . . . . .	<b>524,494</b>	...	...	...	...	...	...		

DIX I—*contd.*AND MINERALS—*contd.*No. I—*contd.*year 1931 at mines under the Indian Mines Act—*contd.*

daily in and about the mines.

Open workings.								Total Underground and Open workings.	Surface.						Grand Total.	
Males.				Total Males.	Females.	Total Males and Females.	Males.				Females.	Total Males and Females.				
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.				Clerical and supervis- ing staff.		Skilled labour.	Unskilled labour.			Total Males.			
<b>STONE—<i>contd.</i></b>																
27	46	...	189	262	...	262	262	11	6	250	267	...	267	529		
2	50	...	...	52	...	52	52	2	...	60	68	...	68	120		
6	77	30	40	155	...	155	155	7	3	225	235	...	235	390		
3	10	27	...	40	...	40	40	2	2	1	6	...	6	40		
40	188	57	229	509	...	509	509	23	11	542	576	...	576	1,065		
228	1,004	396	2,282	3,906	1,973	5,879	5,876	131	137	920	1,208	240	1,448	7,826		
259	1,662	223	2,360	4,504	2,712	7,216	7,216	147	188	1,347	1,682	217	1,899	9,115		
-86	-658	+173	-76	-599	-739	-1,338	-1,338	+4	-51	-427	-474	+28	-451	-1,789		
<b>ROCK)</b>																
1	155	3	40	199	10	209	209	14	46	230	290	58	348	557		
23	267	...	...	310	165	475	475	...	...	...	...	...	...	475		
2	...	8	60	70	52	122	122	...	4	...	4	...	4	126		
6	...	209	18	233	155	388	388	...	...	...	...	...	...	388		
12	80	122	123	337	155	522	543	8	47	129	164	86	220	763		
13	190	211	394	807	47	854	854	60	289	596	945	354	1,299	2,153		
55	557	550	595	1,757	604	2,361	2,362	68	340	725	1,133	390	1,523	3,905		
14	7	11	56	88	...	88	88	10	21	98	129	24	153	241		
...	...	...	25	25	...	25	25	2	13	31	46	...	46	71		
...	...	...	32	32	...	32	32	...	...	...	...	...	...	32		
2	...	10	...	12	...	12	12	5	3	60	68	10	78	90		
...	...	29	60	80	...	80	80	...	...	20	20	...	20	100		
...	...	...	100	100	100	200	200	...	...	...	...	...	...	200		
31	87	104	590	808	10	818	818	22	2	45	69	45	114	332		
9	19	51	180	259	173	432	432	6	1	...	7	...	7	439		
15	30	...	200	245	141	386	386	9	...	3	17	...	17	403		
71	143	193	1,243	1,649	424	2,073	2,073	54	40	292	356	79	435	2,508		

APPEN  
STATISTICS OF MINES

Table  
Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of persons employed						
			Underground.						
			Males.					Females.	Total Males and Females.
			Foremen and Mate.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
			<b>STONE (CHIEFLY IGNEOUS)</b>						
Burma	Bassien	1,500	..	..	..	..	..	..	
	Lower Chhindwin	21,785	..	..	..	..	..	..	
	Meiktila	480	..	..	..	..	..	..	
	Taroy	6,840	..	..	..	..	..	..	
	Thaton	170,517	..	..	..	..	..	..	
	Toungoo	12,306	..	..	..	..	..	..	
	<b>Total</b>	<b>213,978</b>	..	..	..	..	..	..	
Central Provinces.	Akola	18,506	..	..	..	..	..	..	
	Amrohi	7,562	..	..	..	..	..	..	
	Chanda	2,408	..	..	..	..	..	..	
	Saugor	3,532	..	..	..	..	..	..	
	<b>Total</b>	<b>29,008</b>	..	..	..	..	..	..	
Madras	Chingleput	88,413	..	..	..	..	..	..	
	East Godavari	2,518	..	..	..	..	..	..	
	Guntur	1,354	..	..	..	..	..	..	
	Madura	450	..	..	..	..	..	..	
	Ramnad	200	..	..	..	..	..	..	
	Tinavelly	705	..	..	..	..	..	..	
	<b>Total</b>	<b>93,640</b>	..	..	..	..	..	..	
Punjab	Jhelum	33,528	..	..	..	..	..	..	
	Mianwali	45,640	..	..	..	..	..	..	
	Bawalpindi	8,000	..	..	..	..	..	..	
	Shahpur	22,000	..	..	..	..	..	..	
	Sheikhupura	23,004	..	..	..	..	..	..	
	<b>Total</b>	<b>137,170</b>	..	..	..	..	..	..	
United Provinces.	Allahabad	1,991	..	..	..	..	..	..	
	Banda	6,643	..	..	..	..	..	..	
	Jhansi	28,620	..	..	..	..	..	..	
	Saharanpur	63,020	..	..	..	..	..	..	
	<b>Total</b>	<b>99,273</b>	..	..	..	..	..	..	
Grand Total (Stone) for 1931.		1,607,592	..	..	6	5	..	21	
Grand Total (Stone) for preceding year.		2,207,497	..	..	..	..	..	..	
Difference		-659,905	..	..	+6	+15	..	+21	

DIX I—contd.

AND MINERALS—contd.

No. 1—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

Open workings.						Total Males and Females.		Total Underground and Open workings.		Surface.						Grand Total.
Males.					Females.					Males.					Females.	
Foremen and Males.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.						Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.	Total Males and Females.		
...	...	...	46	46	...	46	46	...	...	...	...	...	...	46		
...	...	...	281	281	...	281	281	...	...	...	...	...	...	303		
...	...	10	...	10	5	15	15	...	...	...	...	...	...	15		
...	...	...	90	90	70	160	160	...	...	...	...	...	...	160		
8	1,150	73	473	1,704	40	1,744	1,744	...	...	...	...	...	...	1,821		
1	...	5	197	205	...	205	205	5	...	...	...	...	...	210		
9	1,152	88	1,067	2,336	115	2,451	2,451	54	10	40	104	...	104	2,555		
9	...	...	210	219	141	360	360	6	...	...	6	...	6	366		
4	...	...	90	94	60	154	154	...	...	...	...	...	...	156		
2	...	...	40	42	40	82	82	...	...	...	...	...	...	82		
...	...	...	20	20	...	20	20	...	...	...	...	...	...	20		
15	...	...	363	375	241	616	616	8	...	...	8	...	8	624		
...	...	234	121	355	175	530	530	29	...	230	259	338	592	1,122		
1	...	49	14	64	99	93	93	...	...	...	...	...	...	96		
...	...	53	3	56	3	59	59	...	...	...	...	...	...	59		
...	...	...	16	16	...	16	16	...	...	...	...	...	...	16		
...	...	10	...	10	...	10	10	...	...	...	...	...	...	10		
...	...	...	40	40	1	41	41	...	...	...	...	...	...	41		
1	...	346	194	541	208	749	749	29	...	230	259	333	592	1,341		
8	63	...	118	190	9	199	199	8	5	14	27	...	22	221		
10	...	...	150	160	80	240	240	...	...	...	...	...	...	240		
12	75	...	...	87	...	87	87	...	...	32	32	...	32	119		
10	100	...	100	210	...	210	210	...	...	...	...	...	...	210		
...	...	64	122	186	...	186	186	1	8	8	12	...	12	198		
40	238	65	490	833	89	922	922	4	8	54	66	...	66	988		
...	18	...	...	18	...	18	18	...	...	8	8	...	8	21		
3	2	9	91	105	45	150	150	6	8	...	14	36	50	200		
16	258	55	2	331	18	349	349	37	51	145	233	172	347	636		
9	...	108	174	291	121	412	412	4	4	150	158	...	158	570		
28	273	172	267	740	184	924	924	47	63	308	418	150	563	1,487		
220	2,518	1,416	4,276	8,430	1,875	10,305	10,326	278	507	1,644	2,629	1,010	3,639	13,965		
257	3,818	994	4,987	10,058	1,893	11,449	11,449	253	514	2,164	2,931	649	3,580	15,029		
-37	-1,300	+422	-711	-1,626	+482	-1,144	-1,123	+25	-7	-320	-302	+361	+59	-1,064		



DIX I—contd.

AND MINERALS—contd.

No. 1—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.														
Open workings.							Total Underground and Open workings.	Surface.						Grand Total.
Males.					Females.	Total Males and Females.		Males.					Total Males and Females.	
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.	Females.		
STONE.														
4	68	...	20	87	7	94	94	2	...	...	2	...	2	96
...	...	18	...	18	13	26	26	...	...	...	...	...	...	26
2	2	3	10	17	8	25	25	2	...	...	2	...	2	27
...	...	2	5	7	4	11	11	...	2	...	2	...	2	13
2	2	5	15	24	12	36	36	2	2	...	4	...	4	40
6	65	18	85	124	32	156	156	4	2	...	6	...	6	...
13	86	91	493	588	193	755	755	6	8	18	27	16	43	...
-7	+29	-63	-397	-438	-161	-599	-599	-2	-6	-13	-21	-16	-37	-636

APPEN  
STATISTICS OF MINES

Table

Number of workers and output of minerals during the

Province.	District and mineral field.	Total Output.	Average number of persons employed						
			Underground.						
			Males.					Females.	Total Males and Females.
			Foremen and Matos.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
Burma .	Thaton . . . .	Tons 49,866	...	...	...	...	...	...	LATE
	Toungoo . . . .	448	...	...	...	...	...	...	...
	Total . . . .	50,314	...	...	...	...	...	...	...
Central Provinces.	Jubbulpore . . . .	2,462	...	...	...	...	...	...	...
	Grand Total (Late-rite) for 1931.	52,776	...	...	...	...	...	...	...
	Grand Total for preceding year.	43,771	...	...	...	...	...	...	...
	Difference . . . .	+9,005	...	...	...	...	...	...	...
Bihar and Orissa. Madras	Singhbhum . . . .	7,197	}						GRA
	Chingleput . . . .	18,504							Figures inclu
	Grand Total (Gravel) for 1931.	25,701							
	Grand Total for preceding year.	3,500							
	Difference . . . .	+22,201							



DIX I—contd.

AND MINERALS—contd.

No. 1—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

Open workings.							Total Underground and Open workings.	Surface.					Grand Total.	
Males.				Females.	Total Males and Females.	Males.			Females.	Total Males and Females.				
Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.			Total Males.		Clerical and supervis- ing staff.			Skilled labour.	Unskilled labour.		Total Males.
RITE.														
...	...	1	10	11	...	11	11	1	...	...	1	...	1	13
...	...	...	28	28	...	28	28	...	...	...	...	...	...	28
...	...	1	38	39	...	39	39	1	...	...	1	...	1	40
2	3	...	43	43	20	63	63	1	...	3	4	...	4	
2	3	1	81	87	20	107	107	2	...	3	5	...	5	112
6	255	7	62	330	34	364	364	5	1	7	13	...	13	377
-4	-252	-6	+19	-243	-14	-257	-257	-3	-1	-4	-8	...	-8	-265
VEL.														
ded in those for stone.														
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...



DIX I—*contd.*AND MINERALS—*contd.*No. 1—*contd.*year 1931 at mines under the Indian Mines Act—*contd.*

daily in and about the mines.

		Open workings.					Total Males and Females.	Total Underground and Open workings.	Surface.					Grand Total.		
		Males.							Females.	Males.					Females.	Total Males and Females.
		Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervising staff.	Skilled labour.	Unskilled labour.	Total Males.			
<b>RUM.</b>																
Stone.																
...	...	4	215	219	180	349	349	1	7	...	8	...	8	357		
Stone.																
...	...	4	215	219	180	349	349	1	7	...	8	...	8	357		
Stone.																
...	...	4	215	219	180	349	349	1	7	...	8	...	8	357		
24	...	...	762	766	487	1,223	1,223	4	51	9	64	1	65	1,288		
-24	...	+4	-547	-567	-307	-374	-374	-3	-44	-9	-56	-1	-57	-961		
<b>CLAY.</b>																
1	3	3	10	16	15	31	31	...	...	...	...	...	...	31		
4	37	...	14	55	5	60	60	1	2	21	24	15	39	99		
1	16	4	...	23	18	41	41	1	18	12	26	7	33	74		
1	16	...	3	19	3	21	21	1	1	11	13	14	27	48		
6	71	4	16	97	25	122	122	3	16	44	63	36	99	221		

APPEN  
STATISTICS OF MINES

Table

Number of workers and output of minerals during the

Province.	District and Mineral field.	Total Output.	Average number of persons employed						
			Underground.						
			Males:					Females.	Total Males and Females.
			Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
Central Provinces.	Jubbulpore	Tons. 19,399	...	...	...	...	...	...	FIRE
	Grand Total (Fire Clay) for 1931.	27,500	...	...	...	...	...	...	...
	Grand Total for preceding year.	61,909	...	4	4	...	8	...	8
	Difference	-34,409	...	-4	-4	...	-8	...	-8
Bihar and Orissa.	Bhagalpur	115	2	8	...	15	25	...	25
	Singhbhum	14,816	...	...	...	...	...	...	...
	Total	14,931	2	8	...	15	35	...	25
Delhi	Delhi	2,553	2	16	...	28	44	...	44
Rajputana	Ajmer-Merwara	400	...	...	...	...	...	...	...
	Grand Total (China Clay) for 1931.	17,884	4	24	...	41	69	...	69
	Grand Total for preceding year.	18,512	1	32	...	17	50	...	50
	Difference	+4,372	+8	-8	...	+24	+19	...	+19

## DIX I—contd.

## AND MINERALS—contd.

## No. 1—contd.

year 1931 at mines under the Indian Mines Act—contd.

daily in and about the mines.

Open workings.								Total Underground and Open workings.	Surface.						Grand Total.	
Males.					Females.	Total Males and Females.	Males.					Total Males and Females.				
Foremen and Matos.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.			Total Underground and Open workings.		Clerical and supervis- ing staff.	Skilled labour.	Unskilled labour.		Total Males.	Females.		Total Males and Females.
CLAY—contd.																
10	...	...	125	135	474	609	609	1	4	23	23	5	38	642		
17	74	6	151	248	514	762	762	4	20	67	91	41	132	694		
18	213	34	120	380	263	643	651	15	23	100	138	59	197	846		
+8	-139	-26	+31	-132	+251	+119	+111	-11	-3	-39	-47	-18	-35	+46		
CLAY.																
1	...	...	20	21	7	28	53	4	2	11	17	...	17	70		
18	191	11	20	235	353	588	588	11	22	94	127	109	236	894		
14	191	11	40	256	360	616	641	15	24	105	144	109	253	894		
...	...	...	...	...	...	...	44	...	...	7	7	2	9	53		
1	3	2	...	6	1	7	7	...	...	...	...	...	...	7		
15	194	13	40	262	381	623	692	15	24	112	151	111	262	954		
11	116	3	62	192	220	412	462	16	25	49	92	65	157	619		
+4	+76	+10	-22	+70	+141	+211	+230	-3	-1	+63	+59	+46	+105	+335		

APPEN  
STATISTICS OF MINES

Table  
Number of workers and output of minerals during the

Province.	District and mineral field.	Total Output.	Average number of persons employed					
			Underground.					
			Males.					Total Males and Females.
			Foremen and Mates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.	
					Females.			
Assam	Lakhimpur	Tons. 19,486	...	...	...	...	...	CL
Bengal	Burdwan	21,158	...	...	...	...	...	...
Central Provinces.	Jubbulpore	4,142	...	...	...	...	...	...
Punjab	Attock	11,852	Figures included in those					
	Grand Total (Clay) for 1931.	56,688	...	...	...	...	...	...
	Grand Total for preceding year.	28,970	...	...	...	...	...	...
	Difference	+27,668	...	...	...	...	...	...
Madras	Cuddapah Kurnool	1,200	...	...	...	...	...	BARY
		1,100	...	...	...	...	...	
	Grand Total (Barytes) for 1931	2,300	...	...	...	...	...	...
	Grand Total for preceding year.	8,898	...	...	...	...	...	...
	Difference	-6,098	...	...	...	...	...	...

DIX I—*contd.*AND MINERALS—*contd.*No. 1—*contd.*year 1931 at mines under the Indian Mines Act—*contd.*

daily in and about the mines.

Open workings.							Total Underground and Open workings.	Surface.						Grand Total.
Males.					Females.	Total Males and Females.		Males.					Total Males and Females.	
Workmen and Matee.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.				Clerical and supervis- ing staff.	Skilled labour.	Unskilled labour.	Total Males.	Females.		
<b>AY.</b>														
2	...	...	10	12	4	16	16	...	...	...	...	...	...	16
1	...	28	66	95	62	157	157	8	...	...	8	...	8	165
3	...	8	4	15	8	23	23	1	...	...	1	...	1	24
<b>for Limestone.</b>														
6	...	36	80	122	74	196	196	9	...	...	9	...	9	205
3	46	...	18	67	54	121	121	1	...	...	1	...	1	122
+3	-46	+36	+62	+55	+20	+75	+75	+8	...	...	+8	...	+8	+83
<b>TES.</b>														
2	12	5	23	42	...	42	42	3	...	24	27	20	47	89
...	..	...	53	53	...	53	53	...	...	...	...	7	7	60
2	12	5	76	95	...	95	95	3	...	24	27	27	54	149
...	79	...	121	200	49	249	249	...	...	...	...	...	...	249
+2	-67	+5	-45	-105	-49	-154	-154	+3	...	+24	+27	+27	+54	-100











APPEN  
STATISTICS OF MINES

Table

Number of workers and output of minerals during the

Provinces.	District and mineral field.	Total Output.	Average number of persons employed						
			Underground.						
			Males.					Females.	Total Males and Females.
			Foremen and Hates.	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.		
Burma	Tavoy . . . . .	lb. 42	...	...	...	...	...	...	BIS Figures included in those
	Total for preceding year.	112	...	...	...	...	...	...	
	Difference	-70	...	...	...	...	...	...	
Rajputana	Ajmer-Merwara	Tons. 333	...	...	...	...	...	...	FELDS
	Total of preceding year.	39	1	...	...	7	8	...	8
	Difference	+294	-1	...	...	-7	-8	...	-8
Bihar & Orissa	Monghyr . . . . .	lb. 100	...	...	...	...	...	...	COLUM
	Total of preceding year.	...	...	...	...	...	...	...	...
	Difference	+100	...	...	...	...	...	...	...
	Grand Total (Metal-liferous Mines) for 1931.	...	566	8,922	1,536	5,539	16,568	209	16,772
	Grand Total for preceding year.	...	826	12,492	1,909	4,755	19,994	397	20,391
	Difference	...	-262	-3,570	-373	+784	-3,421	-188	-3,609
	Grand Total (all Mines) for 1931.	...	...	...	...	...	93,585	16,841	115,726
	Grand Total for preceding year.	...	...	...	...	...	101,649	18,684	120,333
	Difference	...	...	...	...	...	-2,764	-1,843	-4,607

DIX I—contd.

AND MINERALS—concl'd.

No. 1—concl'd.

year 1931 at mines under the Indian Mines Act—concl'd.

daily in and about the mines.

Foremen and Males.	Open workings.					Females.	Total Males and Females.	Total Underground and Open workings.	Surface.					Total Males and Females.	Grand Total.			
	Males.								Females.	Total Males and Females.	Males.					Females.	Total Males and Females.	
	Miners.	Other skilled labour.	Other unskilled labour.	Total Males.							Clerical and supervising staff.	Skilled labour.	Unskilled labour.					Total Males.
MUTH. for Tin.	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
PAR.	1	...	6	8	1	9	9	...	...	...	...	...	...	...	9			
...	...	...	...	...	...	...	8	...	...	...	...	...	...	...	8			
+1	+1	...	+6	+8	+1	+9	+1	...	...	...	...	...	...	...	+1			
BITE.	1	28	...	8	37	...	37	37	8	...	4	7	26	83	70			
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
+1	+28	...	+8	+37	...	+37	+37	+3	...	+4	+7	+26	+83	+70				
1,250	14,407	3,320	11,134	30,120	11,612	41,732	58,504	1,255	2,413	6,719	10,357	3,624	14,011	72,515				
1,511	21,348	3,108	18,289	39,244	15,559	54,803	75,184	1,531	2,888	8,982	13,401	4,081	17,482	92,666				
-261	-6,941	+226	-2,148	-9,124	-3,947	-18,071	-16,660	-276	-475	-2,268	-3,014	457	-3,471	-20,151				
...	...	...	...	38,888	16,079	54,912	170,688	...	...	...	45,157	14,967	60,144	280,782				
...	...	...	...	50,896	21,166	71,582	191,915	...	...	...	52,709	17,043	69,752	23,167				
...	...	...	...	-11,563	-5,107	-16,670	-21,277	...	...	...	-7,552	-3,086	-9,606	-30,882				

Table

Average hours worked per week in

Mineral Field.	Underground.					
	Overmen and Sirdars. Foremen and Mates.	Miners.	Loaders.	Skilled Labour.	Un- skilled Labour.	Females.
Jharja Coalfield (Bihar & Orissa)	48	48	48	47	46	48
Raniganj „ (Bengal)	48	48	48	45	45	48
Jirdih „ (Bihar & Orissa)	48	37	37	45	43	35
Assam „	42	32	40	41	39	...
Punjab „	40	40	40	41	42	...
Baluchistan Coalfield	38	38	38	36	...	...
Pench Valley Coalfield (Central Provinces)	51	46	48	50	49	48
Bihar & Orissa Mica	47	46	...	48	44	...
Madras Mica	45	45	...	44	44	...
Central Provinces Manganese	50	45	...	50	48	...
Central Provinces Limestone	...	...	...	...	...	...
Bihar & Orissa Iron	...	...	...	...	...	...
Burma Lead	49	49	...	49	48	...
Burma Tin	47	46	...	48	48	...
Punjab Salt	54	45	...	48	49	48
Bihar & Orissa China Clay	48	48	...	...	48	...
Punjab Slate	48	48	...	48	...	...
United Provinces Stone	...	...	...	...	...	...

## DIX I—contd.

## No. 2.

each important mining field during the year 1931.

Open workings.						Surface.			
Overmen and Sirdars. — Foremen and Mates.	Miners.	Loaders.	Skilled Labour.	Un-skilled Labour.	Females.	Clerical and Supervising Staff.	Skilled Labour.	Un-skilled Labour.	Females.
43	43	44	47	45	44	54	52	51	50
48	43	47	44	45	43	53	51	50	49
44	44	44	45	48	37	49	46	46	45
37	40	40	41	37	37	50	44	44	44
...	...	...	...	...	...	43	45	44	24
48	48	48	...	...	...	36	36	30	...
...	48	...	60	...	60	54	52	52	51
43	42	...	46	43	37	51	50	51	51
46	45	...	43	42	45	45	44	45	44
48	44	...	51	48	45	48	45	46	45
47	45	...	47	47	46	46	45	47	46
48	48	...	46	49	46	48	48	48	48
48	...	...	...	48	...	53	53	50	...
47	43	...	43	43	45	47	46	48	...
54	54	...	...	...	...	54	46	46	54
43	43	...	42	42	44	45	44	44	43
52	43	...	52	52	...	48	...	48	...
44	40	...	42	45	43	45	41	40	41

Table

Analysis of figures relating to

Province.	Coalfield.	Coal.					
		Opening stock.	Raisings.	Total.	Despatches.	Colliery consumption.	Coal delivered for coking.
		Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Assam	Makum . . . . .	...	238,965	238,965	219,409	16,121	3,485
	Nasira . . . . .	1,388	34,963	36,351	33,703	1,847	...
	Sibsagar . . . . .	...	350	350	26	...	...
Baluchistan	Baluchistan . . . . .	1,325	13,472	14,797	13,906	...	...
Bengal (and part of Bihar and Orissa).	Raniganj . . . . .	238,812	6,580,713	6,814,525	5,918,279	501,418	60,483
Bihar and Oris	Jharia . . . . .	377,254	9,755,037	10,332,291	7,797,318	534,705	1,026,772
	Bokaro . . . . .	1,338	1,656,597	1,657,935	1,589,288	45,118	15,915
	Karanpura . . . . .	1,404	461,678	463,082	438,050	18,216	17
	Giridih . . . . .	21,646	713,133	734,779	640,995	26,960	...
	Jainty . . . . .	512	50,178	50,690	40,302	8,965	...
	Daltonganj . . . . .	...	411	411	...	411	...
	Hutar . . . . .	101	...	101	...	...	...
	Hingir-Rampur . . . . .	704	31,220	31,924	32,846	8,937	...
Central Provinces.	Fench Valley . . . . .	8,788	750,015	758,758	711,975	36,355	...
	Chanda . . . . .	9,350	223,025	232,275	206,093	22,091	...
Punjab	Salt Range . . . . .	2,916	54,840	57,756	54,639	1,385	...
	Total 1931 . . . . .	910,408	20,514,597	21,425,005	17,681,474	1,222,569	1,106,622



DIX I—contd.

No. 3.

output of Coal and Coke, 1

Coal despatched to coke factories.	Closing stocks.	Coke.									
		Opening stocks.		Coke made.		Despatches.		Colliery consumption.		Closing stocks.	
		Hard.	Soft.	Hard.	Soft.	Hard.	Soft.	Hard.	Soft.	Hard.	Soft.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
...	...	...	...	685	...	661	...	24	...	...	...
...	801	...	...	...	...	...	...	...	...	...	...
...	324	...	...	...	...	...	...	...	...	...	...
...	891	...	...	...	...	...	...	...	...	...	...
...	339,350	24	680	...	43,639	22	41,966	2	471	...	1,852
1,526,957	978,496	4,817	7,232	49,499	676,976	45,845	677,040	275	934	8,196	6,234
10,519	7,644	12	...	5,300	3,544	4,968	3,544	61	...	233	...
...	6,790	...	...	...	17	...	17	...	...	...	...
34,553	66,824	...	...	...	...	...	...	...	...	...	...
...	1,523	...	...	...	...	...	...	...	...	...	...
...	101	...	...	...	...	...	...	...	...	...	...
...	591	...	...	...	...	...	...	...	...	...	...
...	10,423	...	...	...	...	...	...	...	...	...	...
...	4,091	...	...	...	...	...	...	...	...	...	...
...	1,482	...	...	...	...	...	...	...	...	...	...
1,572,028	1,414,340	4,858	7,912	55,484	724,176	51,496	722,597	362	1,405	8,479	8,086

## APPENDIX I—contd.

Table No. 4.

Number of mines opened, closed and inspected, during the year 1931.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>COAL.</b>								
Assam .	Lakhimpur—Makum Coalfield .	7	6	1	...	1	7	20
	Naga Hills—Nazira „ .	1	...	1	...	...	1	4
	Sibsagar . . . . .	1	...	1	1	...	...	...
Baluchistan .	Baluchistan Coalfield . . .	18	...	18	2	1	9	18
Bengal (and part of Bihar and Orissa).	Raniganj Coalfield . . . . .	206	162	44	11	22	201	792
Bihar and Orissa.	Jharia Coalfield . . . . .	247	181	66	19	30	247	1,027
	Bokaro „ . . . . .	5	5	...	...	...	5	30
	Karanpura Coalfield . . . . .	5	3	2	2	1	3	11
	Giridih Coalfield . . . . .	9	4	5	1	3	6	20
	Jainty „ . . . . .	5	1	4	1	...	5	6
	Daltonganj Coalfield . . . . .	1	1	...	...	1	...	...
	Hingir-Rampur Coalfield . . . . .	1	1	...	...	...	1	2
Central Provinces.	Pench Valley Coalfield . . . . .	18	12	6	4	3	15	33
	Ohanda Coalfield . . . . .	6	6	...	...	...	5	8

APPENDIX I—*contd.*Table No. 4—*contd.*Number of mines opened, closed and inspected, during the year 1931—*contd.*

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
			<b>COAL—<i>contd.</i></b>					
Punjab	Salt Range Coalfield	15	...	15	4	5	9	12
	Grand Total (Coal) for 1931	540	383	158	45	67	514	1,983
	Grand Total of preceding year.	549	381	168	68	61	515	1,709
	Difference	-9	+1	-10	-18	+6	-1	+274
			<b>IRON ORE.</b>					
Bihar and Orissa	Singhbhum	5	2	3	1	3	4	4
Burma	...	5	...	5	...	4	...	...
	Grand Total (Iron Ore) for 1931	10	2	8	1	7	4	4
	Grand Total of preceding year.	10	...	10	...	1	6	14
	Difference	...	+2	-2	+1	+6	-2	-10
			<b>MANGANESE ORE.</b>					
Bihar and Orissa	Singhbhum	10	...	10	3	6	7	7
Bombay	...	6	1	5	...	1	...	...

APPENDIX I—*contd.*Table No. 4—*contd.*Number of mines opened, closed and inspected, during the year 1931—*contd.*

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>MANGANESE ORE—<i>contd.</i></b>								
Central Provinces.	...	35	6	29	3	26	10	11
Madras	...	5	1	4	...	5	2	2
	Grand Total (Manganese Ore) for 1931.	56	8	46	6	38	19	20
	Grand Total of preceding year.	82	9	78	8	43	40	53
	Difference	-26	-1	-25	-2	-5	-21	-33
<b>LEAD ORE.</b>								
Burma	Shan States	2	2	...	...	...	2	14
	Total of preceding year	5	3	2	2	3	5	16
	Difference	-3	-1	-2	-2	-3	-3	-2
<b>GOLD.</b>								
Bihar and Orissa	...	1	...	1	...	1	1	1
	Total of preceding year	2	...	2	1	...	...	...
	Difference	-1	...	-1	-1	+1	+1	+1

## APPENDIX I—contd.

Table No. 4—contd.

Number of mines opened, closed and inspected, during the year 1931—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>TIN AND WOLFRAM ORE.</b>								
Burma	...	136	5	131	27	22	27	31
	Grand Total of preceding year.	176	6	173	36	65	63	71
	Difference	-42	-1	-41	-9	-43	-36	-40
<b>CHROMITE ORE.</b>								
Baluchistan	Zhob	31	...	31	...	31	8	
Bihar and Orissa	Singhbhum	8	...	8	2	2	3	3
	Grand Total (Chromite Ore) for 1931.	39	...	39	2	33	11	11
	Grand Total of preceding year.	36	...	36	2	2	3	3
	Difference	+3	...	+3	...	+31	+8	+8
<b>COPPER ORE.</b>								
Bihar and Orissa	Manbhum	1	...	1	...	...	1	2
	Singhbhum	1	1	...	...	...	1	1
Burma	Henzada	1	...	1	...	1	...	...
	Grand Total (Copper Ore) for 1931.	3	1	2	...	1	2	3
	Grand Total of preceding year.	2	1	1	...	...	2	7
	Difference	+1	...	+1	...	+1	...	-4



APPENDIX I—*contd.*Table No. 4—*contd.*Number of mines opened, closed and inspected, during the year 1931—*contd.*

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>MAGNESITE.</b>								
Madras	Salem . . . . .	2	..	2	..	1	1	2
	Total of preceding year	5	..	5	..	3	1	2
	Difference	-3	..	-3	..	-2	..	..
<b>STEATITE.</b>								
Bihar and Orissa.	Singhbhum . . . . .	3	..	3	..	1	3	3
Central Provinces.	Jubbulpore . . . . .	5	..	5	..	3	2	2
Madras	Nellore . . . . .	2	..	2	..	..	2	2
Rajputana	Ajmer-Merwara . . . . .	1	..	1	1	1	..	..
United Provinces.	Hamirpur . . . . .	8	..	8	4	8	25	29
	Grand Total (Steatite) for 1931	19	..	19	5	13	32	36
	Grand Total of preceding year	17	..	17	6	8	5	5
	Difference	+2	..	+2	-1	+5	+27	+31

## APPENDIX I—contd.

Table No. 4—contd.

Number of mines opened, closed and inspected, during the year 1931—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>SLATE.</b>								
Bihar and Orissa.	...	7	...	7	4	1	6	10
Punjab	...	12	...	12	1	1	3	6
	Grand Total (Slate) for 1931	19	...	19	5	2	12	16
	Grand Total of preceding year	19	...	19	5	5	15	20
	Difference	...	...	...	...	-3	-3	-4
<b>LIMESTONE.</b>								
Bihar and Orissa.	...	10	2	8	1	...	7	8
Bombay	Sukkur	1	...	1	...	1	1	1
Barma	...	7	...	7	1	2	2	3
Central Provinces.	...	16	1	15	2	4	13	13
Punjab	...	6	1	5	...	...	5	6
	Grand Total (Limestone) for 1931.	40	4	36	4	7	28	31
	Grand Total of preceding year.	40	4	36	5	9	26	38
	Difference	...	...	...	...	-1	-2	-7



## APPENDIX I—contd.

Table No. 4—contd.

Number of mines opened, closed and inspected, during the year 1931—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>STONE (CHIEFLY IGNEOUS ROCK).</b>								
Bengal	Birbhum	4	1	3	...	...	...	...
Bihar and Orissa.	...	55	1	54	5	14	16	17
Bombay	...	22	2	20	3	7	15	19
Burma	...	19	...	19	3	3	21	27
Central Provinces.	...	6	...	6	1	1	10	10
Madras	...	13	...	13	12	5	64	64
Punjab	...	13	...	13	..	...	14	15
United Provinces.	...	17	...	17	4	3	40	56
	Grand Total (Stone) for 1931	149	4	145	28	33	180	208
	Grand Total of preceding year	144	1	143	23	25	128	161
	Difference	+5	+3	+2	+5	+8	+57	+47
<b>LATERITE.</b>								
Barma	...	2	...	2	...	1	1	1
Central Provinces.	Jubbulpore	3	...	3	1	...	...	...
	Grand Total (Laterite) for 1931	5	...	5	1	1	1	1
	Grand Total of preceding year	4	...	4	...	...	2	2
	Difference	+1	...	+1	+1	+1	-1	-1

## APPENDIX I—contd.

Table No. 4—contd.

Number of mines opened, closed and inspected, during the year 1931—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>SANDSTONE.</b>								
Bihar and Orissa.	...	2	...	2	...	...	2	3
Burma	...	1	...	1	...	...	...	...
United Provinces.	...	4	...	4	...	...	8	8
	Grand Total (Sandstone) for 1931.	7	...	7	...	...	10	11
	Grand Total of preceding year.	12	...	12	2	2	4	4
	Difference	-5	...	-5	-2	-2	+6	+7
<b>MURUM.</b>								
Bombay	...	1	...	1	...	1	...	...
	Total of preceding year	2	...	2	...	1	...	...
	Difference	-1	...	-1	...	...	...	...
<b>FIRE CLAY.</b>								
Bengal	Burdwan	2	...	2	1	...	...	...
Bihar and Orissa.	...	3	...	3	1	...	1	1
Central Provinces.	...	4	1	3	...	2	2	2
	Grand Total (Fire Clay) for 1931	9	1	8	2	2	3	3
	Grand Total of preceding year.	11	2	9	...	3	5	5
	Difference	-2	-1	-1	+2	-1	-2	-2

## APPENDIX I—contd.

Table No. 4—contd.

Number of mines opened, closed and inspected, during the year 1931—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.		
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.	
Bihar and Orissa.	...	6	...	<b>CHINA CLAY.</b>				6	7
Delhi	...	4	...	4	4	3	7	9	
Rajputana	...	1	...	1	...	...	1	1	
	Grand Total (China clay) for 1931.	11	...	11	4	5	14	17	
	Grand Total of preceding year.	9	...	9	3	3	14	14	
	Difference	+2	...	+2	+1	+2	...	+3	
Assam	Lakhimpur	1	...	<b>CLAY.</b>				1	1
Beagal	Burdwan	2	1	1	1	1	...	...	
Central Provinces.	Jubbulpore	1	...	1	...	...	...	...	
	Grand Total (Clay) for 1931	4	1	3	2	1	1	1	
	Grand Total of preceding year	2	1	1	...	...	2	2	
	Difference	+2	...	+2	+2	+1	-1	-1	
Central Provinces.	Chanda	2	...	<b>OCHRE.</b>				...	...
United Provinces.	Banda	1	...	1	1	...	...	...	
	Grand Total (Ochre) for 1931	3	...	3	1	...	...	...	
	Grand Total of preceding year.	3	...	3	2	1	...	...	
	Difference	...	...	...	-1	-1	...	...	

APPENDIX I—*contd.*Table No. 4—*contd.*Number of mines opened, closed and inspected, during the year 1931—*contd.*

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
Madras		4	...	4	3	...	1	1
	Total of preceding year	15	...	15	13	9	...	...
	Difference	-11	...	-11	-10	-9	+1	+1
Madras				<b>APATITE.</b>				
	Trichinopoly	1	...	1	...	...	1	...
	Grand Total of preceding year	2	...	2	...	1	1	1
	Difference	-1	...	-1	...	-1	...	...
Rajputana				<b>ASBESTOS.</b>				
	Ajmer-Merwara	4	...	4	4	4	...	...
	Total of preceding year	1	...	1	...	1	...	...
	Difference	+3	...	+3	+4	+3	...	...
Bihar and Orissa.	Singhbhum	1	...	1	...	...	1	1
	Ajmer-Merwara	1	...	1	1	1	...	...
Rajputana				<b>KYANITE.</b>				
	Grand Total (Kyanite) for 1931	2	...	2	1	1	1	1
	Total of preceding year	1	1	...	...	...	1	1
	Difference	+1	-1	+2	+1	+1	...	...

APPENDIX I—*contd.*Table No. 4—*concl'd.*Number of mines opened, closed and inspected, during the year 1931—*concl'd.*

Province.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.				INSPECTIONS.	
			Worked under mechanical power.	Not worked by mechanical power.	Opened during the year.	Closed during the year.	Number of mines inspected.	Number of inspections.
<b>BERYL.</b>								
Bajputana	Ajmer-Marwara	1	...	1	1	...	...	...
	Total of preceding year	1	...	1	1	1	...	...
	Difference	...	...	...	...	-1	...	...
<b>FELDSPAR.</b>								
Bajputana.	Ajmer-Marwara	1	...	1	...	...	1	1
	Total of preceding year	1	...	1	1	...	...	...
	Difference	...	...	...	-1	...	+1	+1
<b>COLUMBITE.</b>								
Bihar and Orissa.	Monghyr	1	...	1	1	1	...	...
	Total of preceding year	...	...	...	...	...	...	...
	Difference	+1	...	+1	+1	+1	...	...
	Grand Total (Metaliferous Mines).	877	66	811	162	339	484	575
	Grand Total of preceding year.	1,120	66	1,054	286	371	443	552
	Difference	-243	...	-243	-124	-32	+41	+23
	Grand Total (All Minerals)	1,417	446	969	207	406	998	2,558
	Grand Total of preceding year.	1,669	447	1,222	349	432	958	2,961
	Difference	-252	+1	-253	-142	-26	+40	+207

## APPENDIX I—contd.

Table No. 5.

The following table shows the fluctuations in the output of the principal minerals raised from mines classed under the Indian Mines Act. The other minerals raised are slate, magnesite, steatite, clay, fuller's earth, ochre, barytes, apatite, asbestos, stone, Kyanite, Gypsum, Feldspar and Columbite.

Year.	Coal.	Manga- nese ore.	Mica.	Lime- stone.	Salt.	Gold.	Copper ore.	Wolfram ore.	Iron ore.	Chro- mite ore.	Tin ore.	Lead ore.	Silver.
	Tons.	Tons.	Cwts.	Tons.	Tons.	Troyozs.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Troy ozs.
1922	18,168,988	892,322	30,069	140,507	187,157	8,338	30,704	942	240,363	19,695	1,030	172,018	4,206,133
1923	18,763,967	846,878	31,605	236,161	118,700	1,519	6,550	872	292,083	25,235	1,011	245,925	4,844,043
1924	20,256,034	668,331	40,529	513,333	159,918	3,646	38	739	430,805	27,850	1,627	310,288	5,287,900
1925	19,969,041	710,347	45,383	614,232	125,366	293	...	772½	529,376	21,230	2,307	331,854	4,681,569
1926	20,093,034	857,099	41,451	627,223	123,801	1,058	9,508	751	600,343	16,455	2,568	362,904	5,103,705
1927	21,108,976	878,521	43,061	1,132,235	145,311	2,395	5,010	530	1,069,381	17,066	2,656	450,777	6,004,586
1928	21,515,796	716,626	44,629	1,404,578	145,543	7	18,055	623	1,200,754	17,167	2,777	443,054	7,404,728
1929	22,308,174	750,906	49,437	1,318,647	148,496	30	76,831	1,061	1,436,385	21,054	3,284	464,561	7,280,517
1930	22,683,861	623,078	53,519	1,143,313	147,276	30	123,740	1,500	1,133,593	30,483	3,001	530,119	7,054,206
1931	20,514,597	347,373	46,177	882,226	134,916	..	153,636	969	690,176	14,938	2,552	397,679	900,400

Table No. 6.

The following table shows the amount of coal raised, the average number of persons working daily and the death-rates during the years 1922 to 1931 in respect of coal mines under the Indian Mines Act :—

Year.	Amount of coal raised.	Average number of persons work- ing daily below and above ground.	Number of deaths below and above ground.	Death-rates.	
				Per 1,000,000 tons raised.	Per 1,000 per- sons working daily below and above ground.
1922 . . . . .	Tons. 18,168,988	184,355	209	11.50	1.13
1923 . . . . .	18,763,967	182,601	382	17.69	1.82
1924 . . . . .	20,256,034	187,088	230	11.35	1.23
1925 . . . . .	19,969,041	173,140	186	9.81	1.07
1926 . . . . .	20,093,024	170,628	171	8.51	1.00
1927 . . . . .	21,108,976	165,218	181	8.57	1.10
1928 . . . . .	21,515,796	164,139	218	10.13	1.83
1929 . . . . .	22,308,174	165,658	194	8.70	1.17
1930 . . . . .	22,683,861	169,001	211	9.30	1.25
1931 . . . . .	20,514,597	158,267	185	9.02	1.17

## APPENDIX I—contd.

Table No. 7.

Aggregate horse power and purpose for use of electric motors installed both on surface and underground at coal mines under the Indian Mines Act.

Coalfield.	Horse power on surface.					Horse power below ground.					Total horse power of motors installed.	
	Winding.	Ventilation.	Haulage.	Coal washing or screening.	Miscellaneous.	Total.	Haulage.	Pumping.	Portable machinery.	Miscellaneous.		Total.
Assam . . . . .	...	117	220	7	52	396	60	...	...	...	60	456
Bokaro . . . . .	758	245	335	137	891	2,356	230	934	118	310	1,587	3,943
Central Provinces . . . . .	...	...	...	...	72	72	40	201	60	...	303	377
Giridih . . . . .	45	370	...	130	492	977	771	2,775	116	...	3,664	4,641
Jharia . . . . .	2,980	860	2,290	761	4,043	10,934	7,743	19,060	3,622	1,151	31,576	42,510
Karanpura . . . . .	50	...	750	95	303	1,198	...	327	62	...	389	1,587
Punjab . . . . .	...	...	...	...	...	...	...	12	...	...	12	12
Raniganj . . . . .	2,828	1,890	560	697	385	5,860	6,156	12,023	3,634	51	21,914	27,774
Total . . . . .	6,661	2,982	4,145	1,827	6,178	21,793	15,000	35,332	7,657	1,516	59,505	81,208

Table No. 8.

Number of Mines under the Indian Mines Act, where electric power is used, and the aggregate horse power of electric motors installed.

Province.	Minerals worked.						Total horse power of motors installed.
	Coal.		Silver-Lead.		Sundry Minerals.		
	Number of mines.	Horse power.	Number of mines.	Horse power.	Number of mines.	Horse power.	
Assam . . . . .	4	456	...	...	...	...	456
Bengal . . . . .	51	24,167	...	...	1	50	24,217
Bihar and Orissa . . . . .	65	56,238	...	...	4	2,431	58,719
Bombay . . . . .	...	...	...	...	2	263	263
Burma . . . . .	...	...	2	3,617	4	1,694	5,311
Central Provinces . . . . .	3	375	...	...	3	327	702
Madras . . . . .	...	...	...	...	1	224	224
Punjab . . . . .	1	12	...	...	1	787	799
Total . . . . .	124	81,208	2	3,617	16	5,776	90,891

## APPENDIX I—contd..

Table No. 9.

Number and type of coal-cutting machines at work in Coal Mines under the Indian Mines Act.

Name of machine.	British.	American.	Chain.	Bar.	Perussive.	Power.			Total number of machines.
						Electricity.		Compressed air.	
						A. C.	D. C.		
Anderson Boyes . . . . .	1	...	1	...	...	1	...	...	1
Goodman . . . . .	...	82	82	...	...	54	28	...	82
Hardiux . . . . .	2	...	...	...	2	...	...	2	2
Hardy . . . . .	13	...	...	...	13	13	...	...	13
Mavor and Coulson . . . . .	81	...	29	52	...	75	1	5	81
Sullivan . . . . .	...	16	16	...	...	16	...	...	16
<b>Total</b>	<b>97</b>	<b>98</b>	<b>128</b>	<b>52</b>	<b>15</b>	<b>159</b>	<b>29</b>	<b>7</b>	<b>195</b>

Jharia coalfield . . . . . 85 machines }  
 Raniganj coalfield . . . . . 100 " }  
 Bokaro coalfield . . . . . 4 " } Total number of square feet  
 Karanpura coalfield . . . . . 4 " } undercut 10,888,305.  
 Central Provinces coalfield . . . . . 2 " }

Table No. 10.

Number of mechanical ventilators in use at Coal Mines under the Indian Mines Act.

Assam.	Bengal.	Bihar and Orissa.	Central Provinces.	Total.
11	29	42	10	92

Table No. 11.

Number of safety lamps in use at Coal Mines under the Indian Mines Act.

Assam.	Baluchistan.	Bengal.	Bihar and Orissa.	Total.
2,274	12	11,071	9,714	23,071

1,164 were locked by screws, 7,491 by lead rivets and 14,416 by magnetic means.



APPENDIX I—*conold.*

Table No. 12.

Statement of explosives used during the year 1931 at mines under the Indian Mines Act.

Name of explosives.	Quantity of explosives used, in lb., in :—								Total.
	Coal mines.	Mica mines.	Manga- nese mines.	Lead ore mines.	Tin and Wolfram ore mines.	Lime- stone mines.	Stone mines.	Other mines.	
Dynamite . . . .	170,796	64,853	7,880	...	1,380	778	15,618	25,680	287,195
Gelignite . . . .	62,297	48,048	55,497	108,856	1,999	11,941	14,647	244,051	542,338
Monobel . . . .	89,283	...	...	...	...	...	...	...	89,283
Stonobel . . . .	95,011	...	...	...	...	...	...	...	95,011
Rockite . . . .	3,099	...	...	...	...	...	...	...	3,099
Bobbinite . . . .	825	...	...	...	...	...	...	...	825
Franoda . . . .	105	...	...	...	...	...	...	...	105
Gunpowder . . . .	2,496,777	1,226	49,249	...	...	173,740	211,750	108,917	3,096,059
Number of detonators used.	1,128,652	717,193	384,262	236,069	46,303	30,223	119,448	347,687	3,019,857

**APPENDIX II.**  
**ACCIDENTS IN MINES.**

**Table No. 1.**  
**Fatal Accidents during the year 1931.**

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES.</b>						
<b>(a) Falls of roof—(65 deaths).</b>						
1	6th January 8 A.M.	Makerwal mine, Trag P. O., Punjab.	Lala Ishar Dass and C. B. Bevan- Petman.	Sher Khan, son of Mohd. Khan, (m.), 25, <i>Coal-cutter.</i>	Coal	A miner was working at the face of a gallery when a piece of stone, 1' 6" x 1' 0" x 10", fell from a height of 3 feet 7 inches, and struck him. He sustained injuries which proved fatal. Inspection and inquiry made.
2	6th January, 9 A.M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Mirwanza Pathan, (m.), 30, <i>Labourer.</i>	Coal	Whilst a number of persons were clearing roads preparatory to starting an 'opening' or chamber a large mass of coal and clay, 15' x 15' x 6' thick, fell from concealed 'slips' in the roof. One of the miners was buried and suffocated. Inspection and inquiry made.
3	7th January, 11 P.M.	Wagon South mine, Tavoy P. O., Burma.	Consolidated Tin Mines of Burma Ld.	Tam Yin, (m.), 36, <i>Tributor.</i>	Tin and wolfram.	Deceased removed a fence and entered a disused adit. Whilst engaged in getting ore he undermined the side of the adit and brought about a fall of roof which killed him. Inspection and inquiry made.
4	10th January, 6 A.M.	Kalithan Gurgaon mine, Bhojudih P. O., Bihar and Orissa.	K. B. Seal & Sons.	Gobinda Roy, (m.), 35, <i>Coal-cutter.</i>	Coal	In an underground working place a mass of roof stone, 15' x 8' x 9', fell from a concealed 'slip' at a height of 9 feet. Deceased was killed instantly. Inspection and inquiry made.
5	28th January, 5-30 A.M.	Kendwadih mine, Bhaga P. O., Bihar and Orissa.	Hurriladih Co., Ld.	Bikhoo Mahnto, (m.), 35, <i>Coal-cutter.</i>	Coal	Whilst a pillar of coal in a seam 7 feet thick was being extracted a slab of stone, 30' x 4' x 9', fell from the roof and struck two miners who were loading coal near the face. One of them was killed and the other seriously injured. Inspection and inquiry made.

6	29th January, 5-45 P. M.	Lower Joyrampur mine, Jharia P. O., Bihar and Orissa	Ghela Panchan & Co.	Gulu Manjhi, (m.), 40, <i>Coal-carrier.</i>	Coal	Whilst deceased was working in a depillaring section of a mine a small pillar of coal under extraction collapsed. He was struck by the falling coal and killed instantly. Inspection and inquiry made.
7	20th January, 11 P. M.	Lodna (Nos. 4 & 5 Pits) mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co. (1920), Ld.	Munda Gowala, (m.), 35, <i>Coal-cutter.</i>	Coal	Deceased was lying down in a gallery 14 feet high, when a small piece of coal fell on his chest. He sustained internal injuries to which he succumbed almost immediately. Inspection and inquiry made.
8	4th February, 8-30 P. M.	Dhobidih mine, Giridih P. O., Bihar and Orissa.	Bengal Giridih Coal Co., Ld.	Jiten Gope, (m.), 25, <i>Coal-cutter.</i>	Coal	A miner was killed by a fall of roof stone, 6' x 3' x 1-6", in a goafed area near his working place. Inspection and inquiry made.
9	16th February, 10 A. M.	Thamedanng (Htantalone) mine, Tavoy P. O., Burma.	U. Ba Oh.	Ooh Pong, (m.), 36, <i>Tributor.</i>	Wolfram	A tributor entered an old adit and was buried by a mass of earth, 10' x 5' x 4', which fell from the roof — a height of 5 feet. He was suffocated. Inspection and inquiry made.
10	19th February, 8 P. M.	Burrnagarh mine, Kusunda P. O., Bihar and Orissa.	Ransegunge Coal Association, Ld.	Bhatni Bajwarin, (f.), 25, <i>Coal-carrier.</i>	Coal	A woman was at work near the face of a gallery, when a mass of coal, 30' x 5' x 2' fell from concealed 'slips' at a height of 7 feet. She was killed on the spot. Inspection and inquiry made.
11	27th February, 6-45 A. M.	Sendra mine, Bansjora P. O., Bihar and Orissa.	Sendra Coal Co., Ld.	Karimon Meah, (m.), 40, <i>Coal-cutter.</i> Imamon Meah, (m.), 24, <i>Loader.</i>	Coal	The deceased were robbing coal from a pillar on the side of a haulage road when a mass of stone, 19' x 9' x 5' thick, fell from between two 'slips' at a height of 7 feet. They were killed instantly and another miner was seriously injured. Inspection and inquiry made.
12	1st March, 12-10 A. M.	Bararoo mine, Jealgora P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Rangu Chamar, (m.), 32, <i>Miners' sirdar.</i> Daulat Joshawara, (m.), 35, <i>Coal-cutter.</i>	Coal	The deceased entered a fenced gallery 25 feet high in which there was roof coal which had not been dressed down after blasting. A mass of roof coal, weighing about 10 cwt., fell upon them and killed them instantly. Inspection and inquiry made.
13	11th March, 7-30 P. M.	Standard (Jharia Bhas Section) mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Basudeb Dhanuk, (m.), 30, <i>Coal-carrier.</i>	Coal	Deceased was loading coal under some roof coal which had recently been blasted, when a piece of coal, 3' x 1' 6" x 1', fell on him from a height of 18 feet. He was killed instantly. Inspection and inquiry made.
14	16th March, 2 P. M.	Hermyingyi mine, Hermyingyi P. O., Burma.	Consolidated Tin Mines of Burma, Ld.	Lee Shut, (m.), 25, <i>Tributor.</i>	Tin	Without permission two tributors entered a disused adit and while at work there one of them was partially buried by a mass of earth, weighing about 3 tons, which fell from the roof. He was fatally injured. Inspection and inquiry made.

**APPENDIX II—contd.**  
**Fatal Accidents during the year 1931—contd.**

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—contd.</b>						
<i>(a) Falls of roof—(65 deaths)—contd.</i>						
15	18th March, 10 A.M.	Kestore mine, Kansuda P. O., Bihar and Orissa.	Raneegungo Coal Association, Ltd.	Chandan Bajwar, (m.), 45, Coal-cutter.	Coal	Whilst a miner was at work in a gallery, 15' wide and 8'-6" high, a mass of roof stone, 18' x 9' x 2' 6" thick, fell from between concealed 'elips' and displaced three timber bars. The miner was killed on the spot. Inspection and inquiry made.
16	22nd March, 4 P.M.	Aldih mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ltd.	Laru Turi, (m.), 52, Coal-cutter.	Coal	Deceased was injured by a fall of roof on a haulage road. He died from blood poisoning nine days later. Inspection and inquiry made.
17	28rd March, 10-30 P.M.	Bawdwin mine, Namtu P. O., Burma.	Burma Corporation Ltd.	Tong Pin Tong, (m.), 22, Miner.	Silver- lead- zinc.	Three miners were at work at the face of a level, when a mass of rock fell from a concealed 'slip' in the face and struck one of the miners, fatally injuring him. Inspection and inquiry made.
18	26th March, 6-15 A.M.	Sorampr mine, Giridih P. O., Bihar and Orissa.	East Indian Rail- way.	Budin Mejhian, (f.), 15, Coal-carrier.	Coal	Whilst ten persons were working in a depillaring area, the weight of the unsupported roof in the goaf caused a mass of roof coal, 32' x 22' x 1'-6", to fall from a height of 12 feet. A woman was killed instantly, three workmen were seriously injured and five others received minor injuries. Inspection and inquiry made.
19	10th April, 7-15 A.M.	Mosaboni mine, Mosaboni P. O., Bihar and Orissa.	Indian Copper Cor- poration Ltd.	Lal Singh Girthi, (m.), 32, Labourer.	Copper	Whilst passing through a stope where blasting had been done and roof dressing was in progress, deceased was struck and killed by a mass of stone, 7' x 5' x 9", which fell unexpectedly from a height of 8 feet. Inspection and inquiry made.
20	24th April, 4-45 P.M.	Singaran mine, Torosi P. O., Bengal.	Singaran Coal Syndicate, Ltd.	Nilmoni Mejhian, (f.), 50, Labourer.	Coal	Whilst a woman was loading coal underground she was fatally injured by a small piece of coal which fell from the roof at a height of 22 feet. Inspection and inquiry made.

21	24th April, 5 P.M.	Ashakuty mine, Katrasgarh P. O., Bihar and Orissa.	Chandanmull Indrakumar.	Muchiram Rawani Kabar, (m.), 27, Coal-carrier.	Coal	Whilst coal blasted from the roof was being loaded a mass of coal, 3' x 2'-6" x 1'-8", fell from a 'slip' in the roof at a height of about 12 feet. Deceased was struck by the coal, and a woman was seriously injured. Inspection and inquiry made.
22	29th April, 1-30 P.M.	Hantodih mine, Mohuda P. O., Bihar and Orissa.	North West Coal Co., Ltd.	Dantar Bilaspuri, (m.), 45, Coal-cutter.  Tikyatin Bilaspurin, (f.), 28,  Mutki Bilaspurin, (f.), 23, Coal-carriers.	Coal	The deceased were employed in repairing and making secure an abandoned road which had been reopened. They were walking along the road when a mass of stone, 6' x 9' x 9", fell on them from a height of 7½ feet. Inspection and inquiry made.
23	3rd May, 1-30 A.M.	Kirkond mine, Kusunda P. O., Bihar and Orissa.	Shethia's Pure Kirkond Colliery Co.	Dewal Mahato, (m.), 30, Coal-cutter.	Coal	Deceased left his appointed working place and went through a fence to cut coal from the sides of a narrow main gallery, 7 feet high when a wedge shaped mass of roof stone, 8' x 3' x 3", fell on him from between two 'slips' in the roof. He was killed instantly. Inspection and inquiry made.
24	8th May, 12-45 P.M.	Newton Chikli mine, Parasia P. O., Central Provinces.	Newton Chikli Collieries, Ltd.	Parsoo, (m.), 30, Coal-cutter.	Coal	A miner went through a fence to rob coal from a small pillar which had been left in the goaf. A mass of roof stone fell and he sustained injuries which proved fatal. Inspection and inquiry made.
25	8th May, 2-30 P.M.	Tikak mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Norpat Kumal, (m.), 29, Loader.	Coal	Shortly after shots had been fired in an 'opening' or chamber, 35' x 35' x 12' high, a mass of coal, 14' x 12' x 12", fell from the roof and buried three persons. One was killed instantly and the other two were seriously injured. Inspection and inquiry made.
26	10th May, about 6 A.M.	Amlabad mine, Jalgora P. O., Bihar and Orissa.	Eastern Coal Co., Ltd.	Majhli Mejhian, (f.), 38, Coal-loader.	Coal	Whilst filling a basket with coal in an underground gallery a female loader was killed instantly when a piece of coal about 1 cwt. in weight fell upon her without warning from a height of 10 feet. Inspection and inquiry made.
27	12th May, 1 P.M.	Burragarh mine, Kusunda P. O., Bihar and Orissa.	Ranegunge Coal Association, Ltd.	Doodutt Kneri, (m.), 30, Coal-cutter.	Coal	Whilst engaged in digging a sump in the floor of a gallery, 12' wide and 6' high, a minor was fatally injured by a mass of stone, 12' x 8' x 1'-8", which fell from a concealed 'slip' in the roof. Inspection and inquiry made.
28	16th May, 7-15 A.M.	Standard (Benahir section) mine, Jharra P. O., Bihar and Orissa.	Standard Coal Co., Ltd.	Kulada Korin, (f.), 38, Coal-carrier.	Coal	A woman was loading coal in a gallery when a piece of roof stone, 3' x 2'-7" x 3", fell on her from a height of 11 feet, killing her instantly. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents during the year 1931—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—<i>contd.</i></b>						
<b>(a) Falls of roof (65 deaths)—<i>contd.</i></b>						
29	21st May, 12-45 P.M.	Sodepur (Nos. 9 and 10 pits) mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ld.	Budhui Kole, (f.), 25, Coal-carrier.	Coal	Whilst walking along a travelling road deceased was fatally injured by a mass of roof coal, 9' x 3' x 1' thick, which fell without warning from a height of 15 feet. Inspection and inquiry made.
30	26th May, 11-30 A.M.	Bawdwin mine, Namtu P. O., Burma.	Burma Corporation, Ld.	Oha Yin Fu, (m.), 33, Miner.	Silver-lead-zinc.	Whilst at work in a slope a lump of ore fell upon him and fractured his leg. He died in hospital from cerebral malaria six months later.
31	18th June, 11-15 A.M.	Mosaboni mine, Mosaboni P. O., Bihar and Orissa.	Indian Copper Corporation, Ld.	Valoor Ramswamy, (m.), 35, Driller.  Chellan, (m.), 38, Timber mistry.	Copper	A slab of rock, 5 feet in diameter and 12 inches thick, fell from the roof in a rise 6 feet high and 12 feet wide. A propping mistry and a driller were struck by the rock and killed instantly. Inspection and inquiry made.
32	20th June, 11 A.M.	Sirka mine, Argada P. O., Bihar and Orissa.	South Karanpura Coal Co., Ld.	Praendi Bilaspuri, (m.), 25, Coal-cutter.	Coal	Deceased was cutting floor coal in a gallery, when a mass of coal, 9' x 2'-8" x 9", fell on him from a concealed 'slip' at a height of 9 feet. He sustained injuries to which he succumbed two hours later. Inspection and inquiry made.
33	10th July, 6-15 P.M.	Ekra Khas mine, Bansjora P. O., Bihar and Orissa.	Maharajah S. C. Nundy.	Bachoha Chamar, (m.), 35, Coal-cutter.	Coal	In a place where old pillars of coal were being mined by open quarrying, deceased passed through a fence and was killed instantly by a fall of roof coal, 22' x 4' x 4', Inspection and inquiry made.
34	22nd July, 1 A.M.	Haripur mine, Chora P. O., Bengal.	B. N. Mondal	Dukhi Mejhian, (f.), 30; Khuki Mejhian, (f.), 19, Loaders.	Coal	Whilst a tub standing on a tramline was being loaded with coal, a mass of roof coal, 6' x 3' x 2', fell without warning from a height of 25 feet. Two of the three loaders present were fatally injured. Inspection and inquiry made.

35	29th July. 9-30 A. M.	Lodna mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co. (1920), Ltd.	Sadir Ali, (m.), 48, <i>Coal-cutter.</i>	Coal	Three miners were setting a ladder against the side of a pillar in a depillaring area when a mass of roof-coal, 7' x 2' x 1'-6", in an adjoining gallery fell from a height of 27 feet. One of the men was struck by the falling coal and killed instantly. Inspection and inquiry made.
36	4th August, 5-30 P. M.	Upper Ghorawari mine, Junnordeo P. O., Central Provinces.	Lala Buddhoolal	Debi Kole, (m.), 30, <i>Coal-cutter.</i>	Coal	A minor returned to his working place after blasting operations had taken place and before the shot-firer had made his inspection. While he was dressing the roof a piece of roof coal, 1'-6" x 7" x 5", fell from a height of 5'-6" and struck him on the head. He sustained injuries which later proved fatal. Inspection and inquiry made.
37	29th August, 8 P. M.	Namdang mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Bhikoo Passi, (m.), 37, <i>Sirdar.</i>	Coal	Whilst working in an 'opening' or chamber a sirdar was killed by a mass of coal, 3' x 2'-6" x 1', which fell unexpectedly from a height of 10 feet. Inspection and inquiry made.
38	30th August, 5 A. M.	Akhalpur mine, Charanpur P. O., Bengal.	Hazriladhi Coal Co., Ltd.	Sufal Manjhi, (m.), 30, <i>Coal-cutter.</i>	Coal	A minor entered a gallery, which had been fenced off as the roof was insecure, and was robbing coal from the side of the gallery when a mass of stone and coal, 40' x 8'-6" x 3', fell from the roof—a height of 9 feet. He was killed instantly. Inspection and inquiry made.
39	1st September, 4-30 P. M.	Bhagaband mine, Jharia P. O., Bihar and Orissa.	Borra Coal Co., Ltd.	Bamahai Bhuiya, (m.), 34, <i>Coal-cutter.</i>	Coal	Whilst carrying coal, deceased was crushed beneath a mass of stone, 23' x 14' x 2', which fell from the roof at the junction of four galleries at a height of 7 feet. He was killed instantly. Inspection and inquiry made.
40	3rd September, 1 A. M.	Kosoonda—Nyadee mine, Kusunda P. O., Bihar and Orissa.	Kosoonda and Nyadee Collieries Co.	Dhanga Manjhi, (m.), 30, <i>Coal-cutter.</i>	Coal	Deceased left his appointed working place and went through a fence to rob coal from the side of a pillar. A mass of coal 12' x 1'-8" x 1', fell on him from a height of 10 feet, killing him instantly. Inspection and inquiry made.
41	7th September, 11-30 A. M.	Central Kurkend mine, Kusunda P. O., Bihar and Orissa	Central Kurkend Coal Co., Ltd.	Bisahn Bilaspurin, (f.), 28, <i>Loader.</i>	Coal	Whilst preparations were being made to set a prop in a depillaring area, a mass of roof-coal fell from a height of 10 feet. A woman loader, entering the working place unnoticed, was struck by a portion of the coal and killed instantly. Inspection and inquiry made.
42	17th September, 1-30 P. M.	Standard (Jharia Khas) mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ltd.	Sanker Turi, (m.), 48, <i>Coal-cutter.</i>	Coal	Whilst placing a ladder in a gallery after blasting, a miner dislodged a lump of roof coal weighing about 3 lb. The coal fell on him from a height of 26 feet and inflicted injuries to the head so severe that he died after thirty-two hours. Inspection and inquiry made.

**APPENDIX II—contd.**

**Fatal Accidents during the year 1981—contd.**

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—contd.</b>						
<b>(a) Falls of roof—(65 deaths)—concltd.</b>						
43	0th October, 10-15 P. M.	Katras mine, Katragarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Panchli Bhuiyan, (f), 45, Coal-carrier. Thakuri Bhuiya, (m), 45, Coal-cutter.	Coal	Two workmen were sitting down in a gallery, when a mass of roof coal, 15' x 8' x 1'-0", fell on them from concealed 'slips' at a height of 8 feet. The woman was killed on the spot, and the man was severely injured and subsequently died. Inspection and inquiry made.
44	18th October, 12 noon.	Balihari mine, Kusunda P. O., Bihar and Orissa.	Balihari Colliery Co.	Jethu Deswali, (m.), 25, Coal-cutter.	Coal	In a depillaring area a miner was cutting floor coal when a mass of roof coal, 10' x 6' x 2', fell without warning from a height of 7 feet, killing him instantly. Inspection and inquiry made.
45	26th October, 1 P. M.	Kustore mine, Kusunda P. O., Bihar and Orissa.	Bansagunge Coal Association, Ld.	Bajoo Mahato, (m.), 24, Coal-carrier.	Coal	Contrary to verbal orders two men entered a working place which had been declared to be unsafe but had not been fenced to prevent access. Whilst loading coal in the place a mass of coal fell from the roof—a height of 18 feet. One of the men was struck by the falling coal and killed instantly whilst the other was seriously injured. Inspection and inquiry made.
46	27th October, 1 30 P. M.	Footkeo mine, Kusunda P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Gofur Meah, (m.) 40, Coal-cutter.	Coal	Deceased was standing on a ladder levering down some roof coal after blasting when he lost his balance and fell a distance of 10 feet on to some loose coal. He sustained injuries to which he succumbed on the following day. Inspection and inquiry made.
47	18th November, 9-30 A. M.	Dhori mine, Bokaro P. O., Bihar and Orissa.	Bokaro and Ram- gur, Ld.	Dhanea Kewar, (m.), 27, Coal-cutter.	Coal	Whilst a miner was standing on a barrel levering down roof coal, his pick slipped and overbalancing he upset the barrel and fell to the floor. Before he could recover himself he was struck and killed instantly by a mass of roof coal, weighing about 1 ton, which fell from a height of 7 feet. Inspection and inquiry made.



48	19th November, 4 P.M.	Jarandih mine, Bokaro P. O., Bihar and Orissa.	Bombay, Baroda and Central India Rail- way and M. and S. M. Railway.	Girdhari Turi, (m.), 24, Coal-cutter.	Coal	Whilst a miner was illegally loading fallen coal in a fenced off gallery he was killed by a mass of roof-coal, weighing about 2 tons, which fell from a height of 30 feet. Inspection and inquiry made.
49	24th November, 4 P.M.	Sodepur (9 and 10 pits) mine, Sitarampur P. O. Bengal.	Bengal Coal Co., Ld.	Jhari Kole, (m.), 42; Shamlal Kole, (m.), 80; Chharkao Kole, (m.), 35; Bhagirath Kole, (m.), 28; Karoo Kole, (m.), 40; Coal-cutters.	Coal	A gang of eleven miners was employed in extracting the fourth and last quarter of a pillar of coal in a seam 18 feet thick when the pillar collapsed and roof stone, 3 feet thick, fell without warning over an area 30 feet square. Five of the men were killed and one was seriously injured. In- spection and inquiry made.
50	25th November, 8-30 P.M.	Lodna Mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co. (1920), Ld.	Changroo Meah, (m.), 57, Labourer.	Coal	Whilst two timber coolies were sounding the roof of a de- pillaring area in a seam 26 feet thick, a piece of stone, 3' x 2' x 1', fell from a point in the roof 8 feet from the point they were testing. One of them was struck and fatally injured by the falling stone. Inspection and inquiry made.
51	1st December, 4-30 A.M.	Mudidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Surjoo Pasi, (m.), 35, Coal-cutter.	Coal	Deceased entered an underground working place in which the roof was unsafe, and was struck and fatally injured by a piece of stone which fell from the roof 21 feet above. He had been told not to enter the place but no fence had been erected to prevent access. Inspection and inquiry made.
52	5th December, 11 A.M.	Newton Chickli mine, Parsia P. O., Central Provinces.	Newton Chickli Collieries, Ld.	Mansook, (m.), 23, Timberman.	Coal	Whilst the last part of a pillar of coal was being extracted the roof broke down in the adjacent goaf, and the fall ex- tended over the working place. A timberman was killed and a miner severely injured. Inspection and inquiry made.
53	15th December, 2 P.M.	Dhomo Main mine, Sitarampur P. O., Bengal.	Dhomo Main Colli- eries, Ld.	Ganesh Manjhi, (m.), 39, Coal-cutter.	Coal	Whilst two miners were at work in a depillaring area a piece of coal, 1' 3" x 1' x 9" thick, fell from a height of 9 feet. Both of them were injured and one of them subsequently died. Inspection and inquiry made.
54	27th December, 6 A.M.	Dobari mine, Jharia P. O., Bihar and Orissa.	R. N. Bagchi & Bros., Dobari Colliery, Ld.	Sarder Manjhi, (m.), 40, Coal-cutter.	Coal	Deceased was cutting coal at the face of a gallery, when a mass of stone, 6' x 4' x 7", fell unexpectedly from between two 'slips' at a height of 7 feet. He was struck by the stone and sustained injuries to which he succumbed eighteen days later. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents during the year 1931—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—<i>contd.</i></b>						
<b>(b) Falls of side (61 deaths).</b>						
55	6th January, between 9 A.M. and 2 P.M.	Kanbank mine, Kanbank P. O., Burma.	Kanbank Mines, Ltd.	Ma Thot, (f.), 50; Ma Sein Kin, (f.), 40; Ma Than Baw, (f.), 18; Ma Shu, (f.), 14; <i>Tributors.</i>	Tin and wolfram	In spite of previous warnings, four tribute miners undercut the side of a sluicing openout in which working had been prohibited. They were buried and killed when the side of the openout collapsed. Inspection and inquiry made.
56	7th January, 11 A.M.	Choitodih mine, Katrasgach P. O., Bihar and Orissa.	Barrakur Coal Co., Ltd.	Pran Nath Keot, (m.), 15, <i>Coal-carrier.</i>	Coal	In the process of extracting pillars of coal 18 feet in height a mass of some 15 tons of coal fell from a slip in the side of a pillar. Two persons were struck by the coal and in the case of one of them the injuries sustained proved fatal. Inspection and inquiry made.
57	17th January, 5-30 P.M.	Hardwar mine, Hardwar P. O., United Provinces.	East Indian Railway.	Sumera, (m.), <i>Labourer.</i>	Stone	Deceased was killed by a fall of side in an open excavation.
58	20th January, 3-30 P.M.	Bhagaband mine, Jharia P. O., Bihar and Orissa.	Borrea Coal Co., Ltd.	Dhans Roy, (m.), 33, <i>Coal-cutter.</i>	Coal	Whilst a miner was cutting coal from the corner of a pillar a mass of coal 7' x 3' x 2', fell from a pronounced cleat. He was struck by the falling coal and received injuries to which he succumbed twelve hours later. Inspection and inquiry made.
59	21st January, 12-30 P.M.	Sangregorah (Prospecting) mine, Domchanch P. O., Bihar and Orissa.	F. F. Chrestion & Co., Ltd.	Etwari Chasa, (m.), 30, <i>Prospecting contractor.</i>	Mica	Whilst at work in an open excavation deceased was struck and fatally injured by a mass of earth, 3' x 3' x 2', which fell from the side. Inspection and inquiry made.

60	28th January, 2 A.M.	Surangi mine, Harilaghati P. O., Bihar and Orissa.	F. F. Chrestion & Co., Ltd.	Gujar Gopo, (m.), 15, Labourer.	Mica	Whilst at work underground a miner was struck and killed instantly by a mass of stone, 5' x 3' x 2', which fell from the side. Inspection and inquiry made.
61	4th February, 3-30 P.M.	Footkee mine, Kusanda P. O., Bihar and Orissa.	Eastern Coal Co., Ltd.	Harindra Nath Ghose, (m.), 37, Overman;  Bistoo Mahato, (m.), 38, Timberman.	Coal	Whilst an overman and a timberman were setting up props near a pillar of coal under extraction a portion of the pillar collapsed without warning and buried them. The timberman was killed on the spot and the overman succumbed to his injuries two hours later. Inspection and inquiry made.
62	26th February, 4 P.M.	Bhulanbararee mine, Pathardih P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ltd.	Nilmony Mejhian, (f.), 21, Coal-carrier.	Coal	Whilst deceased was filling a basket with coal in a gallery 22 feet high, a mass of coal, 4' x 2' x 1', fell unexpectedly from the side of the gallery. She sustained injuries to which she succumbed within half-an-hour. Inspection and inquiry made.
63	12th March, 11 P.M.	Bagdigi mine, Jharua P. O., Bihar and Orissa.	Anderson Wright & Co.	Changoo Bilaspuri, (m.), 20, Coal-cutter.	Coal	In the process of extracting a pillar of coal, 30 feet high, a small piece of coal fell unexpectedly and struck one of the eight persons employed there. He sustained an injury to the spine and died after eleven days. Inspection and inquiry made.
64	15th March, 8-30 A.M.	Kustore mine, Kusanda P. O., Bihar and Orissa.	Ranoogunge Coal Association, Ltd.	Akloo Bhuiya, (m.), 45, Coal-carrier.	Coal	A loader was assisting to clear away coal which had been dressed down in a main hauling road, 22 feet high, when a mass of coal, 2'6" x 2'0" x 1', fell from between concealed 'slips' near the roof. He sustained serious injuries and, pneumonia supervening, died a fortnight later. Inspection and inquiry made.
65	20th March, 11 P.M.	Huntodih mine, Mohuda P. O., Bihar and Orissa.	North-West Coal Co., Ltd.	Kunche Morol, (m.), 15, Coal-carrier.	Coal	Whilst deceased was at work in a depillaring area a piece of coal, 1'10" x 1'4" x 8", fell upon him from the side of a pillar at a height of 6 feet. He was seriously injured and died nine hours later. Inspection and inquiry made.
66	8th April, 4-45 P.M.	Chinchuria mine, Asansol P. O., Bengal.	New Beerbhoom Coal Co., Ltd.	Sukroo Painka, (m.), 35; Jaharan Goud, (m.), 32; Coal-cutters.	Coal	Whilst a number of miners were extracting a pillar of coal a large mass of coal fell unexpectedly from the pillar. Two of the miners were fatally injured. Inspection and inquiry made.
67	10th April, 8 A.M.	Sawang mine, Bokaro P. O., Bihar and Orissa.	East Indian and Bengal Nagpur Railways.	Durpatia Beldarin, (f.), 36, Coal-carrier.	Coal	A woman was loading coal in a quarry near a mound of earth, 2 or 3 feet high, forming part of the filling of an old trial shaft. The earth fell over and struck her, causing fatal injuries. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents during the year 1931—contd.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—contd.</b>						
<b>(b) Falls of side (61 deaths)—contd.</b>						
68	29th April, 8 A.M.	Kustore mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ld.	Kambal Roy, (m.), 30, Coal-cutter.	Coal	Deceased left his working place and was in the act of loading coal which had fallen from the side of a pillar when about 1½ tons of coal fell upon him. Inspection and inquiry made.
69	7th May, 11 A.M.	Bakudih mine, Barharwa P. O., Bihar and Orissa.	Eastern Bengal Railway.	Jagoo Musahar, (m.), 18, Miner.	Stone	Whilst engaged in removing overburden in a quarry, two miners brought about the fall of ground, measuring 6' x 5' x 1'6". One of the miners was buried and suffocated. Inspection and inquiry made.
70	11th May, 6 P.M.	Dhorl mine, Bokaro P. O., Bihar and Orissa.	Bokaro and Ramgur Ld.	Mathur Mahato, (m.), 35, Coal-cutter.	Coal	Whilst a miner was loading coal at the face of a machine-cut gallery some coal loosened by blasting broke away from the face. He was struck by the coal and sustained fatal injuries. Inspection and inquiry made.
71	15th May, 7-15 A.M.	Payangazu mine, Payangazu P. O., Burma.	K. B. Wali Moha- mad.	Shweohn, (m.), 23, Labourer.	Stone	Deceased was struck and fatally injured by a stone which rolled down the face of an open excavation.
72	23rd May, 5-10 P.M.	Kymore mine, Kymore P. O., Central Provinces.	C. P. Cement Co., Ld.	Rankisan, (m.), 40, Labourer.	Limestone	A labourer was fatally injured when several tons of stone fell from a quarry face, 28 feet high. Inspection and inquiry made.
73	10th June, be- tween 11 A.M. and mid-day.	Kothapalle mine, Kothapalle P. O., Madras.	Tiffin & Co.	Gangannah, (m.), 40-50, Miner.	Barytes	Whilst at work in an open excavation deceased was killed by the collapse of a wall.
74	19th June, 4 A.M.	Sripur mine, Kalipahari P. O., Bengal.	Lodna Colliery Co. (1920), Ld.	Sukur Mani Mejhian, (f.), 40; Lakhi Mejhian, (f.), 22, Loaders.	Coal	Whilst three women were loading coal in a gallery 7 feet high a mass of coal, 6' x 6' x 1', fell from the side of the gallery. Two of the women were fatally injured. Inspection and inquiry made.

75	1st July, 1-30 P.M.	Parbolla mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Sukhi Mejhian, (f.), 42, Hopni Mejhian, (f.), 20, Coal-carriers.	Coal	Whilst a miner was robbing coal from the side of a pillar at a place where tubs were being loaded a mass of coal, 15' x 5' x 5', fell from a height of 8 feet. He was seriously injured and two women were instantly killed. Inspection and inquiry made.
76	8th July, 1 P.M.	Bawdwin mine, Namtu P. O., Burma.	Burma Corporation, Ld.	Dharam Singh, (m.), 28, Miner.	Silver- lead-zinc.	Whilst three miners were erecting timber in a stope a section of the stope collapsed and struck one of the miners who was fatally injured. Inspection and inquiry made.
77	8th July, 2-30 P.M.	Burra Dhomo mine, Sitarampur P. O., Bengal.	Burra Dhomo Coal Co., Ld.	Mongli Panika, (f.), 45, Coal-carrier.	Coal	With the object of getting loose coal a miner accompanied by his mother went through a fence into a gaofed area from which the props had been withdrawn. Whilst they were loading fallen coal a mass of coal, 3' x 3' x 5', fell from the side. The woman was fatally injured. Inspection and inquiry made.
78	4th August, 10-30 P.M.	Taungpila mine, Tavoy P. O., Burma.	Consolidated Tin Mines of Burma, Ld.	Chardri, (m.), 28, Saitoh, (m.), 26, Labourers.	Tin	Whilst hydraulic mining operations were in progress in a large open excavation, a mass of earth and stones, 100' x 80' x 50', slipped from the side and moved a distance of 350 feet. Two workmen were buried and suffocated. Inspection and inquiry made.
79	9th August, 3 P.M.	Wagon South (Bwabin) mine, Tavoy P. O., Burma.	Consolidated Tin Mines of Burma, Ld.	Nanda Lal, (m.), 25, Miner.	Tin	Workmen were engaged in repairing a pipe line in the bed of a stream at the foot of a hill slope, 200 feet high and inclined at an angle of 35 degrees. A mass of earth estimated to weigh approximately 2,400 tons, carrying trees and jungle growth, slipped to the foot of the hill. One of the men was killed and three others were slightly injured. Inspection and inquiry made.
80	18th August, 11 A.M.	Hermyingyi mine, Hermyingyi P. O., Burma.	Consolidated Tin Mines of Burma, Ld.	Kyank Chong, (m.), 36, Dump picker.	Tin	A tributary entered a rise driven from an old adit, and while at work was partially buried by a mass of earth, 6' x 5' x 4', which fell from the side—a height of 6 feet. He was fatally injured. Inspection and inquiry made.
81	25th August, 10 P.M.	Jamadoba mine, Jalgora P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Puru Teli, (m.), 32, Coal-cutter.	Coal	A miner was helping to set a prop in a depillaring area when a mass of coal, 7' x 3'6" x 2', fell from the side of a pillar, a height of 5½ feet. He was struck by a piece of the falling coal and sustained fatal injuries. Inspection and inquiry made.
82	25th August, 12-30 P.M.	Ramsilla mine, Gaya P. O., Bihar and Orissa.	G. W. Powell & A. Ghani.	Baldeo Kori, (m.), 45, Quarryman.	Stone	In barring down a piece of stone from a quarry face, a quarryman released some stone from above. He was partly buried by the fall and sustained fatal injuries. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents during the year 1931—contd

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—contd.</b>						
<b>(b) Falls of side—(61 deaths)—contd.</b>						
83	26th August, 3-30 A.M.	Bhalgora mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., -Ld.	Debi Kahar, (m.), 42, Coal-cutter.	Coal	Whilst loading coal in a depillaring area a miner was fatally injured by a mass of coal, 3' x 3' x 1'6", which fell from two converging 'slips' at a height of 16 feet. Inspection and inquiry made.
84	13th September, 8-15 A.M.	Khas Jharia mine, Jharia P. O., Bihar and Orissa.	Khas Jharia Colliery Co.	Baiga Bilaspuri, (m.), 28, Coal-cutter.	Coal	A miner was at work in a depillaring area when about 15 cwt. of coal and stone fell from the side of a pillar at a height of 12 feet. He was struck by a large piece of coal and killed instantly. Inspection and inquiry made.
85	14th September, 12-45 P.M.	Tsangpila mine, Tavoy P. O., Burma.	Consolidated Tin Mines of Burma, Ld.	Foon Toon, (m.), 44; Kondo Naikoh, (m.), 24; Low Chu, (m.), 26; Bimo, (m.), 35; Baka, (m.), 30. Labourers.	Tin	Whilst hydraulic mining operations were in progress in a large open excavation, a waterlogged mass of ground, 150' x 100' x 90', slipped from the side and moved as far as a sluicing box 1,000 feet distant. Four workmen who were at work in the sluicing box were buried and killed while a fifth was fatally injured. Inspection and inquiry made.
86	16th September, 3-30 P.M.	Blowra mine, Jealgora P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Khandi Mahatan, (.), 22, Coal-carrier.	Coal	Whilst a woman was loading a basket with coal in a gallery, 18 feet high, a mass of coal, 25' x 17' x 2' 6", fell unexpectedly from the side, killing her instantly. Another woman sustained serious injuries. Inspection and inquiry made.
87	24th September, 4 P.M.	Linton's Suratand mine, Jharia P. O., Bihar and Orissa.	P. F. Linton	Kriparam Bilaspuri, (m.), 33, Coal-cutter.	Coal	Without orders from an official of the mine, a miner was undercutting the side of a pillar in a gallery 18 feet high when a mass of coal, 9' x 12' x 2', fell from the side. He was struck and fatally injured by the falling coal. Inspection and inquiry made.

88	7th October, 7 A. M.	Kyatmi mine, Bokpyin P. O., Burma.	Eng Tein Leong	Maung Me, (m.), 33, Miner.	Tin	Whilst at work in a sluicing channel at the bottom of an open excavation, 20 feet deep, a miner was buried and suffocated by a mass of earth and stone, 22' x 10' x 6', which fell from the side. Inspection and inquiry made.
89	9th October, 1 P. M.	Standard (Benahr Section) mine, Jharis P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Mangli Bania, (m.), 45, Coal-cutter.	Coal	In order to make the face of his working place safe, a miner barred down a piece of coal weighing about 50 lb. from a height of about 8 feet. The coal struck him and inflicted fatal injuries. Inspection and inquiry made.
90	10th October, 6 A. M.	Sripore mine, Kalipahari, P. O., Bengal.	Lodna Colliery Co. (1920), Ld.	Raghuandan Singh, (m.), 36, Loader.	Coal	Depillaring operations in a seam 14 feet thick were in progress and a number of loaders were loading coal which has been blasted from a pillar when a 'bump' occurred and a mass of coal weighing about 5 cwt. was dislodged from the side of the pillar. A piece of the coal struck one of the loaders and fatally injured him. Inspection and inquiry made.
91	10th October, 1 P. M.	Kustore mine, Kusunda P. O., Bihar and Orissa.	Baneegunge Coal Association, Ld.	Prayag Mahato, (m.), 35, Loader.	Coal	A loader was filling his basket near the face of a pillar under extraction when a quantity of coal fell from the face at a height of 16 feet. The coal rebounded from a ledge of floor-coal and struck him, inflicting fatal injuries. Inspection and inquiry made.
92	17th October, 4-45 P. M.	Ningah mine, Kalipahari P. O., Bengal.	Lodna Colliery Co. (1920), Ld.	Sukhnda Muchian, (f.), 32, Loader.	Coal	Near the face of a gallery, 15 feet wide and 8 feet high, a piece of coal, 8' x 2' x 1' 6", fell unexpectedly from the side and struck a female loader fatally injuring her. Inspection and inquiry made.
93	3rd November, 4 A. M.	Chinchuria mine, Asansol P. O., Bengal.	New Beerbhoom Coal Co., Ld.	Kaugali Noonis, (m.), 44, Loader.	Coal	Whilst a loader was at work near a pillar of coal under extraction, a mass of about 14 cwt. of coal suddenly burst off the side and, striking him, severed his right forearm. He died a few hours later. Inspection and inquiry made.
94	16th November, 12-30 P. M.	Ningah mine, Kalipahari P. O., Bengal.	Lodna Colliery Co. (1920), Ld.	Jhuma Singh, (m.), 37, Driller.	Coal	A mass of coal, 36' x 7' x 3', fell from the side of a pillar, and deceased, who was passing by at the time, was struck by the coal and killed. Had the overhanging sides been properly supported the accident would not have occurred. Inspection and inquiry made.
95	18th November, 2 A. M.	Central Kurkend mine, Kusunda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ld.	Chinta Ohamar, (m.), 28, Coal-cutter.	Coal	Whilst deceased was engaged in extracting a pillar of coal a mass of coal, 4' x 4' x 1', fell on him from a concealed 'slip' at a height of 8 feet. He sustained injuries to which he succumbed four hours later. Inspection and inquiry made.

**APPENDIX II—contd.**

**Fatal Accidents during the year 1931—contd.**

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>FALLS OF ROOF AND SIDES—concl'd.</b>						
<b>(b) Falls of side—(61 deaths)—concl'd.</b>						
96	4th December, about 6 P.M.	Bhulanbararoo mine, Patkardih P. O., Bihar and Orissa.	Bhulanbararoo Coal Co., Ltd.	Rajaram Thakur, (m.), 23, Coal-cutter.	Coal	Whilst a miner was working in a gallery 26 feet high, a mass of coal weighing about 2 tons fell from the side of a pillar. The coal struck and dislodged a prop set as a support for the roof, and the prop fell on the miner, fatally injuring him. Inspection and inquiry made.
97	8th December, 4-30 P.M.	Chandametta mine, Parasia P. O., Central Provinces.	Pench Valley Coal Co., Ltd.	Gumani Pradhan, (m.), 35, Labourer.	Coal	Whilst cleaning a drain on a main haulage road, a labourer was struck on the back by a piece of coal, weighing about 70 lb. which fell from the side of the road. He succumbed to the injuries sustained about 2 months later. Inspection and inquiry made.
98	10th December, 4 P.M.	Aldih mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ltd.	Jodhan Kurmi, (m.), 33; Banshi Pandey, (m.), 32, Labourers.	Coal	Two workmen engaged in removing rails from a part of the mine in which pillars were being extracted were fatally injured when a mass of coal, 12' x 5' x 3', fell unexpectedly from the side of a pillar. A 'bump' occurred in the goaf at the same time. Inspection and inquiry made.
99	11th December, 2 A.M.	Bejdih mine, Sunderchak P. O., Bengal.	Equitable Coal Co., Ltd.	Dopi Baurin, (f.), 39, Loader.	Coal	Whilst loading coal in an underground gallery, 14 feet high, a woman was killed when a mass of coal, 6' x 7' x 1', fell unexpectedly from the side of the gallery. Inspection and inquiry made.
100	12th December, 11 P.M.	Bagdigi mine, Jharia P. O., Bihar and Orissa.	Anderson Wright & Co.	Pillababu Bhaina, (m.), 45, Coal-cutter.	Coal	In an underground gallery, 28 feet high, four miners were changing the position of a ladder when a piece of coal, weighing about 4 lb., was dislodged by the scraping of the ladder against the side of the gallery. The coal fell from a height of 23 feet and striking one of the men fatally injured him. Inspection and inquiry made.



1	30th December, 8-30 A.M.	Bhulanbararee mine, Pahardih P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ltd.	Patnar Chamar, (m.), 32, Loader.	Coal	Whilst at work in a depillaring area, a coal carrier was struck by a piece of coal, 6' x 6" x 6", which fell off the side of a pillar from a height of 12 feet. He received injuries to the leg and died fifteen days later. Inspection and inquiry made.
102	30th December, 5 P.M.	Dhemo Main mine, Sitarampur P. O., Bengal.	Dhemo Main Collieries, Ltd.	Asaram Satnami, (m.), 35, Loader.	Coal	Whilst a miner was dressing down coal from the side of a pillar in a gallery where roof coal was being mined by blasting a piece of coal, 8' 6" x 2' x 9" thick, fell on him from a height of seven feet. He sustained compound fractures of the leg and forearm and died within a few hours. Inspection and inquiry made.

**IN SHAFTS (WHILST ASCENDING OR DESCENDING BY MACHINERY)—**  
(3 deaths).

103	25th February, 9 A.M.	Katras mine, Katrasgarh P. O., Bihar and Orissa	Burrakur Coal Co., Ltd.	Gangoo Pashman, (m.), 45, Coal-carrier	Coal	Workmen were being lowered and raised in the cages in a shaft 320 feet deep. When the engineman applied the brake its lining became detached and the brake becoming ineffective he lost control of the engine. The descending cage struck the landing platform at the bottom of the shaft with such force that five of the sixteen occupants were severely injured. One of them succumbed to his injuries. The ascending cage was arrested in the headgear by the detaching hook, and its six occupants escaped without injury. Inspection and inquiry made.
104	18th June, 3 P.M.	Chanoh mine, Barakar P. O., Bihar and Orissa.	Bengal Coal Co., Ltd.	Nakul Roy, (m.), 40, Bailing sirdar.	Coal	A sirdar was descending a shaft, 550 feet deep, when one of the guide ropes broke and the cages collided. He was thrown out of the cage and, falling to the bottom of the shaft, was killed instantly. Inspection and inquiry made.
105	2nd December, 1 P.M.	Bankaimulla mine, Charanpur P. O., Bengal.	Bengal Coal Co., Ltd.	Sheik Abid, (m.), 35, Labourer.	Coal	Deceased was killed by falling out of a cage while it was ascending a shaft. Had the bars provided for fencing the ends of the cage been used the accident would have been avoided. Inspection and inquiry made.

**IN SHAFTS (FALLING DOWN SHAFT)—(3 deaths).**

106	20th January, 5 P.M.	Joyramdanga mine, Asansol P. O., Bengal.	New Beerbhoom Coal Co., Ltd.	Jadu Buiya, (m.), 45, Labourer.	Coal	A labourer was assisting to lower a basket containing bricks down an airshaft, 81 feet deep, when he slipped and fell to the bottom of the shaft. He was killed instantly. Inspection and inquiry made.
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**APPENDIX II—contd.**

**Fatal Accidents during the year 1931—contd.**

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>IN SHAFTS (FALLING DOWN SHAFT)—(3 deaths)—contd.</b>						
107	5th August, 12-30 P.M.	Tandaiya mine, Domohanch P. O., Bihar and Orissa.	F. F. Chrestien & Co., Ltd.	Bodhi Gope, (m), 30, Miner.	Mica	Whilst emptying a water bucket at an inset about 55 feet above the bottom of a vertical shaft, a miner fell down the shaft and was fatally injured. Inspection and inquiry made.
108	2nd September, 5 P.M.	Bhutgoria mine, Bhaga P. O., Bihar and Orissa.	Aldih Coal Co., Ltd.	Mohini Bourin, (f.), 20, Stones carrier.	Coal	Deceased was stepping into a cage at a shaft inset when she struck her head against the cage, causing her to fall through a space between the cage and the edge of the shaft. She fell 140 feet to the bottom of the shaft and was killed instantly. Inspection and inquiry made.
<b>IN SHAFTS (MISCELLANEOUS)—(2 deaths).</b>						
109	5th February, 9 P.M.	Pure Kujama mine, Jharia P. O., Bihar and Orissa.	South Buxra Coal Co.	Kali Mahato, (m), 42, Coal-cutter.	Coal	A miner attempted to cross the bottom of the shaft while the cages were in motion. He was struck by the descending cage and sustained injuries to which he succumbed one month later. Inspection and inquiry made.
110	3rd April, 2 A.M.	Lodna (Nos. 4 & 5 pits) mine, Jharia P. O., Bihar and Orissa.	Lodna Colliery Co. (1920) Ltd.	Feraí Singh, (m), 30, Trolleyman.	Coal	A trolleyman attempted to cross the bottom of a shaft while the cages were in motion. He was struck by the descending cage and sustained injuries from which he died nine hours later. Deceased should have used the bye-pass provided. Inspection and inquiry made.
<b>BY EXPLOSIVES—(22 deaths).</b>						
111	7th January, 1-45 P.M.	Wah mine, Wah P. O., Punjab.	Wah Stone and Lime Quarry Ltd.	Hayat Khan, son of Pir Khan, (m), 50, Stone breaker.	Stone	Deceased was struck on the head and fatally injured by a piece of stone projected a distance of 468 feet by blasting operations in an open quarry. Inspection and inquiry made.
112	23rd January, 1 A.M.	Newton Chickli mine, Parasia P. O., Central Provinces.	Newton Chickli Collieries, Ltd.	Piara, (m), 30, Coal-cutter.	Coal	When shots were being fired in an underground gallery a miner miscounted the number of explosions and entered the place as the last charge exploded. He was killed instantly. Inspection and inquiry made.

113	17th February, 8-45 P. M.	Ningah mine, Kalipahari P. O., Bengal.	Lodna Colliery Co., (1320), I.d.	Imodey Moah, (m.), 31; Jagat Bilaspuri, (m.), 30; Budhlal Bilaspuri, (m.), 35; Sumrit Bilaspuri, (f.), 16; Chain Bilaspuri, (m.), 27; Bahram Bilaspuri, (m.), 32; Aktey Bilaspuri, (m.), 37; Pitoo Bilaspuri, (m.), 35; Sahash Bilaspuri, (m.), 35; Mahosh Bilaspuri, (m.), 41; Nankoy Bilaspuri, (f.), 20; Shambhu Shaw, (m.), 32; <i>Loaders.</i> Shyam Sunder Singh, (m.), 28, <i>Munshi.</i>	Coal	Some 21 lb. of gunpowder was issued to four short-firers, placed in a wooden box and taken by one of the shot-firers into a godown for distribution and placing in tin canisters preparatory to its being taken underground. During the temporary absence of the short-firers the gunpowder was ignited and sixteen persons who during heavy rain had taken shelter in the godown were severely burnt. Thirteen of them succumbed to their injuries. It was presumed that some one had been smoking and had set fire to the powder. Inspection and inquiry made.
114	5th May, 4-30 P. M.	155 Hindubagh mine, Hindubagh P. O., Baluchistan.	Baluchistan Chrome Co., Ld.	Abdul Wahid, (m.), 30, <i>Minor.</i>	Chromite	Whilst deceased was attempting to light the fuses of a round of three shots of gelignite in a tunnel, one of the shots exploded and killed him instantly. Inspection and inquiry made.
115	24th May, 2-30 A. M.	Ghorawari mine, Jannordeo P. O., Central Provinces.	Hirdagarh Collieries, Ld.	Seobaks Thakur, (m.), 40, <i>Coal-cutter.</i>	Coal	Deceased left his working place whilst a shot-firer was charging three holes with gunpowder. Unknown to the shot-firer he approached the gallery just as the charges exploded. He was struck by pieces of coal and sustained injuries which proved fatal. Inspection and inquiry made.
116	2nd July, 12-30 P. M.	Jamuria mine, Charanpur P. O., Bengal.	Equitable Co., Ld.	Coal Sakharam Teli, (m.), 33, <i>Coal-cutter.</i>	Coal	Under the mistaken impression that two shots he had lighted had both exploded a miner returned to his working place and was fatally injured when the second shot exploded. Inspection and inquiry made.
117	12th August, 12 Midnight.	Toposi mine, Toposi P. O., Bengal.	Bansra Coal Co., Ld.	Sindhu Roy, (m.), 34, <i>Shot-firer.</i>	Coal	Whilst a shot-firer was preparing a round of gunpowder shots for firing he was killed by the accidental explosion of one of the charges. Inspection and inquiry made.

**APPENDIX I—contd.**

**Fatal Accidents during the year 1931—contd.**

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>BY EXPLOSIVES—(22 deaths)—contd.</b>						
118	28th August, 8-30 P. M.	Jarangdih mine, Bokaro P. O., Bihar and Orissa.	Bombay, Baroda & Central India Railway and M. and S. M. Rail- way.	Dilawar Meah, (m.), 35, Coal-cutter.	Coal	During blasting operations in a quarry after dark a coal-cutter left the appointed place of refuge, and was struck and killed by stone projected by the blasting. Inspection and inquiry made.
119	19th September, 9 A. M.	Sirka mine, Argada P. O., Bihar and Orissa.	South Karanpura Coal Co., Ltd.	Sabat Singh, (m.), 33; Daduram, (m.), 29, Coal-cutters.	Coal	Two coal-cutters were proceeding to their working places underground and one of them was carrying gunpowder cartridges in a canister suspended on a crowbar over his shoulder. He was also carrying an open lamp which by mischance ignited the gunpowder. Both the men sustained serious burns to which they succumbed a few hours later. Inspection and inquiry made.
<b>IRRUPTIONS OF WATER—(2 deaths).</b>						
120	3rd December, 5 P. M.	Jamadoba mine, Jalgora P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ltd.	Rorin Telin, (f.), 28; Jasada Korain, (f.), 25, Coal-carriers.	Coal	An underground gallery was being driven in the neighbourhood of certain galleries which were being used as a lodgment for water. Owing to an unsuspected defect in the mine plan due to an omission in surveying a connection between the two workings was made, and an irruption of water occurred. Two women were drowned. Inspection and inquiry made.
<b>HAULAGE—(32 deaths).</b>						
121	2nd January, 9 A. M.	Parbella mine, Dishergarh P. O., Bihar and Orissa.	Bengal Coal Co., Ltd.	Ramoni Mejhian, (f.), 33, Coal-carrier.	Coal	Whilst a train of nine loaded tubs was crossing a haulage dip the hook of one of the couplings caught the haulage rope and dragged it aside for some distance.—A woman who was standing close by was struck by the rope and crushed between it and a brick wall. She was seriously injured and died thirty three hours later. Inspection and inquiry made.

122	31st January, 5-30 A. M.	Katras mine, Katrasgarh P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Prosadi Bajwar, (m.), 40, Pump-minder.	Coal	A train of eight loaded tubs was being hauled up a gradient of 1 in 5 when a drawbar link failed and the last tub ran wild. A pump-minder who was sleeping at the side of the line was struck by coal thrown from the tub when it overturned; he sustained injuries to which he succumbed twelve hours later. Inspection and inquiry made.
123	13th February, 8 A.M.	Kankane mine, Bansjora P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Foudia Bhuiya, (m.), 27, Trolleyman.	Coal	Two men were pushing a loaded tub on a slightly dipping road, whilst a third man was guiding it over a crossing. The tub ran off the rails, overturned and fell on the third man. He sustained injuries to which he succumbed three hours later. Inspection and inquiry made.
124	13th February, 10-30 P.M.	Kendwadih mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Chedi Singh, (m.), 26, Driller.	Coal	Deceased was struck by a loaded tub which was being trammed on a road with a slight gradient in favour of the load. He received internal injuries which proved fatal a few hours later. Inspection and inquiry made.
125	26th February, 3 P.M.	Tajuwala mine, Dhak P. O., Punjab.	Northern India Coal Co	Wali Mohamad, (m.), 45, Miners' sirdar.	Coal	A train of six loaded tubs was being hauled from a mine up a gradient of 1 in 10 when the coupling of the fourth tub broke and three tubs ran wild. The tubs struck the timber supports at a junction, 200 feet below, and caused the fall of roof stone, 4, thick, over an area measuring 17 feet by 7 feet. Deceased, who was in the vicinity, was struck by the stone and fatally injured. Inspection and inquiry made.
126	18th March, 11 P.M.	Bararee mine, Jalgora P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Johara, (f.), 15, Coal-carrier.	Coal	Whilst a train of twelve empty tubs was being lowered down a haulage plane a link connected to the rope capping broke and the tubs ran wild. Deceased was attempting to cross the road when she was struck by the runaway tubs and fatally injured. Inspection and inquiry made.
127	14th March, 11 A.M.	Dhansar-North Bhagatdih mine, Kusunda P. O., Bihar and Orissa.	Dhansar Coal Co., Ld.	K. K. Hazra Chowdhury, (m.), 60, Manager.	Coal	Deceased was walking on an endless rope haulage road, when he stepped on them owing rope, lost his balance and fell down. He sustained injuries to which he succumbed three hours later. Inspection and inquiry made.
128	21st March, 1 P.M.	Standard (Jharis Khos section) mine, Jharis P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Ellahi Meah, (m.), 50, Coal-cutter.	Coal	Whilst a train of empty tubs was being lowered on an underground haulage slope with a gradient of 1 in 10, the leading tub became uncoupled and ran wild. A miner who was standing at the junction of a working level with the haulage slope was struck by the tub and killed instantly. Inspection and inquiry made.
129	1st April, 10 P.M.	West Jamuria mine, Charanpur P. O., Bengal.	West Jamuria Coal Co., Ld.	Chintamani Baurin, (f.), 58, Loader.	Coal	While a train of ten loaded tubs was being hauled out on an endless haulage road deceased was helping to re-rail a tub on a parallel line. She was struck and fatally injured by a sprag projecting from a wheel of the last tub of the moving train. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents during the year 1931—contd.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>HAULAGE—(33 deaths)—contd.</b>						
180	24th April, about 7-30 P.M.	Loyabad mine, Bansjora P. O., Bihar and Orissa.	Burrakur Coal Co., Ld.	Mathura Jeswara, (m.), 28, Trammer.	Coal	A trammer walking along a haulage road while a train of loaded tubs was being hauled out was knocked down and fatally injured. Inspection and inquiry made.
181	25th April, 1 P.M.	Bhulanbararee mine, Pathardih P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ltd.	Azraf Roy, (m.), 31, Trolleyman.	Coal	Whilst re-railing a loaded tub deceased received a slight injury. Tetanus supervened and he died fifteen days later. Inspection and inquiry made.
182	2nd May, 5-25 P.M.	Barkui mine, Parasia P. O., Central Provinces.	Pench Valley Coal Co., Ld.	Sakroo Gond, (m.), 30, Coal-carrier.	Coal	Five loaded tubs ran wild down an incline of 1 in 10. Deceased, who was pushing an empty tub at the bottom of the incline, was struck by the tubs and fatally injured. Inspection and inquiry made.
183	5th May, 10-20 A. M.	Kustore mine, Kusumda P. O., Bihar and Orissa.	Kansegunge Coal Association, Ld.	Dasarth Bauri, (m.), 50, Road-cleaner.	Coal	Whilst working on an underground haulage road deceased was knocked down and killed by a train of loaded mine cars. Inspection and inquiry made.
184	5th May, 3-20 P. M.	Sodepur (Nos. 9; & 10 pits) mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ld.	Lekhu Dasadh, (m.), 35, Coal-carrier.	Coal	Whilst an empty tub was being lowered down an incline dipping at 1 in 5, it became detached from the rope and ran wild for a distance of 450 feet, where it ran over a coal-carrier, killing him on the spot. Inspection and inquiry made.
185	18th May, 3-30 P. M.	Bararee mine, Jealzora P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Jahan Meah, (m.), 22, Coal-loader.	Coal	Whilst a train of six empty tubs was being lowered down a haulage incline, the leading tub became uncoupled and ran wild. Deceased was asleep on a working level. On hearing the alarm he woke up and ran on to the haulage incline, where he was struck by the tub and fatally injured. Inspection and inquiry made.
186	19th May, 9-5 P. M.	Ningah mine, Kalipahari P. O., Bengal.	Lodna Colliery Co. (1920), Ld.	Hosseni Meah, (m.), 33, Trolleyman.	Coal	Whilst a trolleyman was pushing a loaded tub into a cage at the bottom of a shaft another loaded tub, which had been left standing unspragged at a distance of 40 feet, gravitated towards him. He was crushed between the tubs and sustained injuries which subsequently caused death. Inspection and inquiry made.

137	2nd June, 10-30 A. M.	Chandametta mine, Parasia P. O., Central Provinces.	Pench Valley Coal Co., Ltd.	Ramadin Ahir, (m.), 35, <i>Explosive-carrier.</i>	Coal	Whilst a train of six tubs was being lowered down an incline of 1 in 4½, the haulage rope broke and the tubs ran wild. Deceased, who was about to walk up the incline, ran down the incline instead of taking refuge in the man-hole provided. He was struck by the tubs and fatally injured. Inspection and inquiry made.
138	17th June, 4-30 P. M.	Standard (Jharia Khas section) mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ltd.	Gokul Ohamar, (m.), 20, <i>Loader.</i>	Coal	Deceased was pushing an empty tub up a slight slope when he slipped and fell to the ground. The tub ran back and struck him, causing injuries to which he succumbed within a few hours. Inspection and inquiry made.
139	23rd June, 7 P. M.	Bararee mine, Jalgora P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Bahartin Bilaspurin, (f.), 26, <i>Coal-carrier.</i>	Coal	Whilst a train of eleven loaded tubs was being hauled up a slope of 1 in 12, a coupling failed and nine tubs ran wild. They crashed into two loaded tubs which were resting against a buffer. The buffer broke and the tubs finally came to rest against the corner of a pillar of coal. Deceased was fatally crushed between the tubs and the corner of the pillar. Inspection and inquiry made.
140	27th June, 6-30 P. M.	Bhamori mine, Parasia P. O., Central Provinces.	Amalgamated Coal- fields, Ltd.	Kusni Gondni, (f.), 18, <i>Coal-carrier.</i>	Coal	Deceased was walking up an inclined haulage road when, owing to a haulage clip becoming loose on the rope, two tubs ran wild. She was struck by the tubs and fatally injured. Inspection and inquiry made.
141	9th July, 6 P. M.	Jamadoba mine, Jalgora P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ltd.	Etvari Bilaspurin, (f.), 36, <i>Coal-carrier.</i>	Coal	Whilst a train of nine empty cars was being lowered down an underground haulage road, graded at 1 in 8, the leading car became derailed and the train ran into a branch level. Deceased, who was standing just inside the level, was struck by a car and sustained injuries which proved fatal. Inspection and inquiry made.
142	30th July, 4-30 P. M.	Mahakali mine, Chanda P. O., Central Provinces.	Hajeabhoj Laljee & Co.	Aremallaya Arewar, (m.), 30, <i>Coal-cutter.</i>	Coal	Several miners were walking down a steep haulage incline when owing to imperfect coupling four empty tubs ran wild. The tubs struck two men, fatally injuring one and slightly injuring the other. Inspection and inquiry made.
143	7th August, 11 A. M.	Girimint mine, Charanpur P. O., Bengal.	Girimint Coal Co., Ltd.	Jadhistir Bauri, (m.), 40, <i>Coal-cutter.</i>	Coal	Two miners had removed the first of eight empty tubs which were standing on a tramline dipping at 1 in 80, and were pushing it round a curve, when the tubs behind them ran wild and bumped into them. One of the miners was seriously injured and died nineteen days later. Had the miners spragged the tubs behind them the accident would not have occurred. Inspection and inquiry made.
144	11th August, 7-30 A. M.	Mndidih mine, Sijua P. O., Bihar and Orissa.	Burrakur Coal Co., Ltd.	Baghubir Dasad, (m.), 25, <i>Trolleyman.</i>	Coal	A train of eight empty tubs had been coupled up and was being lowered over the brow of an underground haulage road, when the first five tubs became uncoupled and ran again. A trolleyman was run over by the tubs and fatally injured. If in accordance with standing orders the train had been limited to five tubs and the safety-rope had been attached the accident would not have occurred. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents during the year 1931—*contd.*

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>HAULAGE—(32 deaths)—<i>contd.</i></b>						
145	16th August, 4-30 A.M.	Sirka mine, Argada P. O., Bihar and Orissa.	South Karanpura Coal Co., Ltd.	Mira Bux, (m.), 45, Trammer.	Coal	Deceased was riding or attempting to ride on a train of loaded tubs being hauled from a mine up a slope of 1 in 2, when he was crushed between the tubs and the side of the haulage road. He was killed instantly. He was not authorised to ride on the tubs, and was employed on the surface and not underground. Inspection and inquiry made.
146	16th September, 4-30 P.M.	West Gopalichuckmine, Kusunda P. O., Bihar and Orissa.	Gopalichuck Coal Co., Ltd.	Abdul Meah, (m.), 45, Fitter.	Coal	A fitter was working on a pump on a haulage road when a train of five loaded tubs ran amain due to the failure of the rope socket. He was struck by the tubs and sustained fatal injuries. A drag had been attached, but had broken when the strain came on to it. Inspection and inquiry made.
147	9th October, 3-30 A.M.	Serampur mine, Giridih P. O., Bihar and Orissa.	East Indian Rail- way.	Chaman Rai, (m.), 48, Coal-cutter.	Coal	On a gravity haulage slope five empty tubs ran amain as the result of the breakage of a coupling-hook. A miner who was standing at the foot of the haulage way was crushed between the tubs and the side of the haulage road. He sustained fatal injuries. Inspection and inquiry made.
148	16th October, 9 P.M.	Jote Dhemu mine, Ukhra P. O., Bengal.	Jote Dhemu Colli- ery Co.	Pootoo Baurin, (f.), 50, Loader.	Coal	An aged female loader was killed near the bottom of a winding shaft by a loaded tub which ran wild down a slight gradient. The employment of old persons in a mine is inadvisable. Inspection and inquiry made.
149	5th November, 4 A.M.	Sirka mine, Argada P. O., Bihar and Orissa.	South Karanpura Coal Co., Ltd.	Hiraman Ghasi, (m.), 30, Haulage atten- dant.	Coal	A haulage attendant was walking down a haulage road whilst loaded tubs were being raised. He was severely crushed between the moving tubs and the side of the roadway, and subsequently he died. Inspection and inquiry made.
150	29th November, 1-45 A.M.	Kustore mine, Kusunda P. O., Bihar and Orissa.	Raneesungro Coal Association, Ltd.	Hira Dhikar, (m.), 40, Trolleyman.	Coal	Deceased was riding between the first and second cars of a train of six empty mine cars which was being drawn up a road with a gradient of about 1 in 12. The train became derailed, and he was thrown off and killed. Inspection and inquiry made.



151	17th December, 2-30 P. M.	Kustore mine, Kusanda P. O., Bihar and Orissa.	Raneegungo Coal Association, Ld.	Fakir Mohamad, (m.), 30, Trolleyman.	Coal	Whilst a loaded tub was being lowered down a slope of 1 in 10 by means of sprags it became derailed and overturned. A trammer stationed near the foot of the slope for the purpose of removing the sprags was struck by the tub and fatally injured. Inspection and inquiry made.
152	25th December, 3 P.M.	Jamadoba mine, Jalgora P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Bochon Singh, (m.), 22, Surface labourer.	Coal	Deceased, in attempting to board a train of moving mine cars, slipped and fell and sustained injuries which proved fatal. Inspection and inquiry made.
<b>BY UNDERGROUND MACHINERY—(1 death).</b>						
153	27th February, 7-30 P.M.	Central Kurkend mine, Kusanda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ld.	Amiruddin Meah, (m.), 20, Tugger driver.	Coal	Whilst a haulage engine was in motion the driver appears to have attempted to guide the rope when his hand was caught and he was pulled on to the drum. He was killed instantly. Inspection and inquiry made.
<b>SUNDRIES UNDERGROUND—(12 deaths).</b>						
154	28th January, 4 A.M.	Bejdih mine, Sundarchak P. O., Bengal.	Equitable Coal Co., Ld.	Fulari Bauri, (m.), 30, Driller.	Coal	In a gallery 12 feet high where roof coal was being worked, two miners clamped a drilling machine between the top of a wooden platform, 5 feet high, and the roof of the gallery. While the drill was in operation the pressure exerted by the clamp caused the platform to collapse. The two miners fell to the floor and one of them was fatally injured. Inspection and inquiry made.
155	9th March, 8-30 A.M.	Jamadoba mine, Jalgora P. O., Bihar and Orissa.	Tata Iron & Steel Co., Ld.	Phulbasia Turin, (f.), 16, Coal-carrier.	Coal	Whilst a woman was walking to her working place in underground workings her clothing was set on fire by the lamp carried by one her companions. She succumbed to burns ten hours later. Inspection and inquiry made.
156	14th May, 2-50 A.M.	Kargali mine, Bokaro P. O., Bihar and Orissa.	Secretary of State for India.	Fulmati, (f.), 45, Labourer.	Coal	A woman was pushing a tub in a quarry when a severe storm suddenly arose. In running for shelter she fell and sustained fatal injuries to the head. Inspection and inquiry made.
157	23rd May, 10-30 A.M.	Kalabagh mine, Kalabagh P. O., Punjab.	Government of India.	Mangladha, (m.), 40, Labourer.	Salt	Whilst removing waste salt from a stack, about 5 feet high, deceased was fatally injured by a block of salt, weighing about 100 lb. which toppled over and fell on him. Inspection and inquiry made.
158	4th June, 6-30 P.M.	Damagurria mine, Kulti P. O., Bengal.	Damagurria Coal Co. (1930) Ld.	Mangal Rai, (m.), 35, Trolleyman.	Coal	Three trolleyman were pushing a loaded tub along a tramline on a ledge 37 feet above the bottom of a quarry, when the tub derailed and overturned. One of the men overbalanced, fell over the ledge to the bottom of the quarry, and was killed instantly. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents during the year 1931—contd.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>SUNDRIES UNDERGROUND—(12 deaths)—contd.</b>						
139	25th July, 3 A.M.	Bararee mine, Jeaigora P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Johan Kurmi, (m.), 45, Coal-cutter.	Coal	Whilst standing on a ladder in a gallery, and drilling a shot-hole in the roof-coal a miner fell from a height of 18 feet. He sustained fatal injuries. Inspection and inquiry made.
160	27th August, 6 P.M.	Bararee mine, Jeaigora P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Noharsi Koot, (m.), 34, Coal-cutter.	Coal	In a place where pillars of coal 26 feet in height were being extracted a miner standing on a ladder barred down a piece of coal weighing about 15 cwt. from the top of a pillar. The coal struck and dislodged a prop which, in falling, struck another miner, inflicting fatal injuries. Inspection and inquiry made.
161	2nd October, 3 A.M.	Aldih mine, Silarampur P. O., Bengal.	Aldih Coal Co., Ld.	Chandmani Mejhian (f.), 46, Loader.	Coal	Whilst carrying a large lump of coal on her head down a slope in an underground gallery deceased slipped and fell. The coal fell on her leg causing injuries to which she succumbed later. Inspection and inquiry made.
162	5th December, 8 A.M.	Zawe mine, Touasserim P. O., Burma.	Saw Lein Lee	Kon Sein, (m.), 43, Miner.	Tin	In an open excavation a miner slipped on a steep slope and rolled for a distance of 20 feet. He was internally injured and died six hours later. Inspection and inquiry made.
163	12th December, 4 A.M.	Darkni mine, Parasia P. O., Central Provinces.	Pauoh Valley Coal Co., Ld.	Gonesh Kabar, (m.), 20, Haulage hand.	Coal	Deceased with two other trammers was re-railing a loaded tub when the tub slipped and he was crushed between it and the side of the gallery. He was fatally injured. Inspection and inquiry made.
164	13th December, 6-15 P.M.	Bawdwin mine, Namtu P. O., Burma.	Burma Corporation Ld.	Lee Thong Sai, (m.), 35, Miner.	Silver- lead- zinc.	During stopp filling operations a miner was carried down an inclined slide, by a mass of slurry released from a chute, and projected through an opening, 1-4" x 1-3", into a vertical chute. He fell to the bottom of an unfilled stopp, 4½ feet below, and was killed instantly. Inspection and inquiry made.
165	16th December, 12-1½ P.M.	Bagdigi mine, Jharua P. O., Bihar and Orissa.	Anderson Wright & Co.	Daulat Menh, (m.), 35, Sticker.	Coal	Whilst deceased was supervising the withdrawal of props from a depillaring area, a prop fell and struck him. He received injuries which proved fatal. Inspection and inquiry made.

BY SURFACE MACHINERY—(1 death).

166	17th March, 8-45 A.M.	Khewra mine, Khewra P. O., Punjab.	Government India.	of Khadam Hussain Shah. (m.), 30. <i>Motor attendant.</i>	Salt
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Whilst attempting to replace a belt which had slipped off a pulley in motion deceased was caught between the belt and the pulley and fatally injured. Inspection and inquiry made.

ON SURFACE RAILWAYS AND TRAMWAYS BELONGING TO THE MINE—(12 deaths).

167	3rd February, 2 P.M.	Jatachappa mine, Parasia P. O., Central Provinces.	Amalgamated Coal- fields, Ld.	Bhickchand, son of Bhangi Katia, (m.), 22. <i>Bankman.</i>	Coal
168	5th February, 5-45 A.M.	Junnordeo No. 2 mine, Parasia P. O., Central Provinces.	R. S. H. Verma & Munshi Kanhaiya- lal Ld.	Chandoo. (m.), 30, <i>Trolleyman.</i>	Coal
169	14th February, 4 A.M.	Bejdih mine, Sunderchak P. O., Bengal	Equitable Coal Co., Ld.	Someswar Kurmi, (m.) 20, <i>Haulageman.</i>	Coal
170	2nd March, 11-30 A.M.	Sukkur mine, Sukkur P. O., Bombay.	Government of Bombay. (P. W. Department.)	Ghulam Ali, (m.), 40, <i>Miner.</i>	Stone
171	8th April, 5 A.M.	Dhori mine, Bokaro P. O., Bihar and Orissa.	Bokaro & Ramgur Ld.	Hatun Mesh, (m.), 27, <i>Coke-kilm la- bourer.</i>	Coal
172	6th May, 10-30 A.M.	Sripur mine, Kalipahari P. O., Bengal.	Lodna Colliery Co. (1920) Ld.	Etwari Mahato, (m.), 26. <i>Loader.</i>	Coal

Deceased was helping to hand-shunt a wagon on a surface railway when his shoe caught fast between the rail and a switch. Before he could release it he was run over and sustained injuries which caused death two days later. Inspection and inquiry made.

Owing to the breakdown of a locomotive four trolleyman were in the course of duty riding on a train of 7 tubs which was running down a gradient of 1 in 60 when the leading tub became derailed. They all jumped off and in doing so one of them fell down an embankment 18 feet high. He sustained internal injuries and died eleven hours later. Inspection and inquiry made.

A set of four loaded tubs was being hauled up a surface endless-ropes haulage plane, when in some manner unexplained the haulage clip became detached from the rope. The tubs ran back and struck a haulageman who was standing on the line. He was fatally injured. Inspection and inquiry made.

Whilst hand-shunting trucks on a surface railway deceased was crushed between the buffers of two trucks, and was fatally injured. Inspection and inquiry made.

In attempting to pass between two wagons during hand-shunting operations on a railway siding a labourer was crushed between the buffers and killed instantly. Inspection and inquiry made.

Whilst a loaded wagon was being hand-shunted it struck a temporary support against which a plank was leaning. The plank fell on deceased, inflicting injuries to the skull which caused death within a few hours. Inspection and inquiry made.

**APPENDIX II—contd.**

**Fatal Accidents during the year 1931—contd.**

Serial number	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>ON SURFACE RAILWAYS AND TRAMWAYS BELONGING TO THE MINE—(12 deaths)—contd.</b>						
173	16th May, 2-30 A.M.	Argada mine, Argada P. O., Bihar and Orissa.	Bengal-Nagpur Railway Co., Ld.	Gonesh Gowala, (m.), 40. Shunter.	Coal	A shunter, failing to move a loaded wagon standing in a colliery siding, released the brakes of two empty wagons standing behind and allowed them to run into the loaded wagon. The impact caused the empty wagons to rebound and come together again. Deceased in attempting to pick up a lever was crushed between the buffers of the wagons, and killed instantly. Inspection and inquiry made.
174	30th June, 2 P.M.	Bawdwin mine, Namtu P O., Burma.	Burma Corporation Ld.	Dulla Singh, (m.), 28. Brakesman.	Silver- lead-zinc	Four of a train of ten cars were being moved on to a tippler when a brakesman who was removing the coupling between the fourth and fifth cars slipped and was crushed between the fifth car and the frame of the tippler. He was fatally injured. Inspection and inquiry made.
175	11th September, 10 P.M.	Batibati mine, Kalipahari P. O., Bengal.	Batibati Collieries, Ld.	Keran, Bauri, (m.), 45. Trammer.	Coal	While helping to push a train of five loaded tubs along a level tramline on the surface deceased slipped and fell in front of the train. He was run over and sustained serious injuries to which he succumbed on the following day. Inspection and inquiry made.
176	15th October, 7 A.M.	Anagarpathra mine, Katrasgarh P. O., Bihar and Orissa.	Union Coal Co., Ld.	Dukhni Bhuiyan, (f.), 15, Shale-picker.	Coal	Whilst attempting to cross a siding line when railway wagons were being hand-shunted, a shale-picker was caught between the buffers of a stationary wagon and a moving wagon. She sustained fatal injuries. Inspection and inquiry made.
177	5th December, 8-30 P.M.	Modhujore mine, Kajoragram P. O., Bengal.	Modhujore Co., Ld.	Yongu Nunia, (m.), 16, Oiler.	Coal	Deceased received fatal injuries when a tub from which he was taking coal for his own domestic purposes overturned while running on a surface endless rope haulage track. He was not on duty at the time. Inspection and inquiry made.
178	10th December, 6 A.M.	Ramnagar mine, Kulti P. O., Bengal.	Bengal Iron Co, Ld.	Bhatoo Gope, (m.), 28, Trolleyman.	Coal	Whilst attempting to board a stationary locomotive on a surface tramway a trolleyman was crushed between it and another locomotive which was moving on a parallel line. He received injuries from which he died eight days later. It was against orders to ride on the locomotives. Inspection and inquiry made.

BY ELECTRICITY—(1 death).

179	24th May, about 9 P.M.	Ballihari mine, Kusunda P. O., Bihar and Orissa.	Ballihari Colliery Co.	Bhurubha Kabatri, (m.), 32, Contractor's employee.	Coal	Deceased went into a gallery where bare wires were installed for supplying a pump motor and came into contact with a 'live' wire. He was electrocuted. The system was 3-phase, 550 volts, with earthed neutral. The accident would not have occurred, had an armoured cable, as required by the Electricity rules, been installed. Inspection and inquiry made.
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MISCELLANEOUS ON SURFACE—(10 deaths).

180	1st January, 2-30 P.M.	Bhajipani mine, Parasia P. O., Central Provinces.	Amalgamated Coal-fields Ld.	Jilkoo Goojar, (m.), 30, Labourer.	Coal	Deceased was engaged in demolishing old buildings when a wall collapsed and killed him. Instead of demolishing the wall brick by brick, as ordered, he undermined the wall and caused it to fall. Inspection and inquiry made.
181	5th January, 2-30 P.M.	Chanoh Mine, Barakar P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Moti Dom, (m.), 23, Labourer.	Coal	In a bin forming part of the surface equipment of a sand stowing plant wet sand had caused a block in the shoot conveying sand to a mixer situated in an adjacent shaft. A labourer entered the bin and whilst he was at work with a shovel the block was released and he was carried into the shoot by the moving sand. He was suffocated. Inspection and inquiry made.
182	12th March, 1 A.M.	Jogta mine, Sijua P. O., Bihar and Orissa.	Agabeg Brothers.	Ramjan Meah, (m.), 26, Labourer.	Coal	When five men by means of a manilla rope had lowered a basket containing bricks to a depth of 50 feet in a shaft, 170 feet deep, two of the men fell down and the other three lost control of the load and let go of the rope. Deceased, who was standing near the top of the shaft, was struck by the wooden handles attached to the rope. He sustained injuries to which he succumbed half-an-hour later. Inspection and inquiry made.
183	14th March, 8 P.M.	Tirap mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Bakhal Tanti (m.), 17, Pony Driver.	Coal	The driver of a pony used for hauling tubs on the surface was kicked in the abdomen by a pony driven by another driver. He was internally injured and died almost immediately. Inspection and inquiry made.
184	18th March, 5 A.M.	Datla mine, Junnordeo P. O., Central Provinces.	Amalgamated Coal fields, Ld.	Gangi Dhimran, (f.), 40, Coal-carrier.	Coal	Whilst engaged in carrying coal on the surface deceased accidentally set fire to her clothing. She sustained extensive burns and died two days later. Inspection and inquiry made.
185	17th April, 1 P.M.	Jukehi mine, Katni P. O., Central Provinces.	Nasarwanji Dubash.	M. Boori Goren, (f.), 20, Labourer.	Limestone	Whilst deceased was walking up steps leading from an open excavation, 18 feet deep, she slipped and rolled down to the foot of the steps sustaining injuries which proved fatal. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents during the year 1931—contd.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Cause of accident and remarks.
<b>MISCELLANEOUS ON SURFACE—(10 deaths)—contd.</b>						
186	22nd April, 8-30 A.M.	Bankadun mine, Palaw P. O., Burma.	E. Maxwell-Lefroy	Soon Tin, (m.), 45, Labourer.	Tin	Whilst at work in an open excavation deceased slipped and fell a distance of some eight feet. He sustained fatal injuries. Inspection and inquiry made.
187	6th June, 9 A.M.	Bhulanbararee mine, Pathardih P. O., Bihar and Orissa.	Bhulanbararee Coal Co., Ltd.	Kunjah Moosohar, (m.), 54, Labourer.	Coal	Whilst coal was being loaded from stock on the surface a prop, standing partially buried in the coal, suddenly fell over and struck deceased. He sustained an injury which proved fatal. Inspection and inquiry made.
188	6th July, 2 A.M.	Bararee mine, Jealgora P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Banshi Chamar, (m.), 18, Labourer.	Coal	Whilst cleaning the flues of a boiler, deceased fell into the ash-pit and received extensive burns. He died a few days later. Inspection and inquiry made.
189	1st October, 5 P.M.	Dhobidih mine, Giridih P. O., Bihar and Orissa.	Bengal Giridih Coal Co., Ltd.	Narayan Chamar, (m.), 45, Coal-cutter.	Coal	A small subsidence of the surface occurred in an undermined area where outcrop coal was being quarried. A miner fell amongst the subsiding ground and received fatal injuries. Inspection and inquiry made.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Reason for exclusion.	Cause of accident and remarks.
<b>FATAL ACCIDENTS NOT INCLUDED IN THE STATISTICS—(24 deaths).</b>							
1	6th January, 4-30 P.M.	Samdi and Sangramgarh mine, Samdi P. O., Bengal.	B. Hazra & Co.	Kappa Mejhian, (f.), 32.	Coal	Not employed.	While stealing coal from a disused quarry deceased was killed by a mass of earth, 4'x6'x1', which fell on her from a height of 8 feet. Inspection and inquiry made.
2	27th January, 3 A.M.	Kustore mine, Kusunda P. O., Bihar and Orissa.	Rancegunge Coal Association, Ltd.	An unknown person.	Coal	Not a mining accident.	The decomposed body of a person unknown was found at the bottom of a shaft 200 feet deep. The shaft was properly fenced. Inspection and inquiry made.
3	21st February, 2 A.M.	Kyanktalone mine, Kyanktalone P. O., Burma.	Khan Bahadur Ibrahim.	Ma Neo Ah, (f.), 45.	Stone	Not employed.	A block of stone, 8'x3'x3', was dislodged by miners and rolled down the face of a quarry for a distance of some 150 feet, where it broke into pieces. A woman who was bringing food to one of the miners was struck and fatally injured by one of the fragments. Inspection and inquiry made.
4	16th March, 8-30 P.M.	Darulah mine, Pandaveswar P. O., Bengal.	New Kendah Coal Co., Ltd.	Konka Manjhi, (m.), 50, <i>Coal-cutter.</i>	Coal	Not a mining accident.	Deceased was sleeping in a straw shelter which caught fire. He sustained burns which subsequently caused death. Inspection and inquiry made.
5	31st March, 5-45 P.M.	Serampur mine, Giridih P. O., Bihar and Orissa.	East Indian Railway.	Pokhan Chamar, (m.), 11.	Coal	Not employed.	One of the brick walls of a tank containing water collapsed, and two children playing nearby were seriously injured. One of the children died shortly after. Inspection and inquiry made.
6	1st April, 8-45 A.M.	Hindustan Ialpath mine, Chanda P. O., Central Provinces.	Diwan Bahadur Ballabhdas & Sons.	Elloy son of Lingaya Modi, (m.), 11.	Coal	Not employed.	Unknown to the person in charge an unemployed boy was riding beneath a railway wagon which was being hand shunted. He fell off the moving wagon, and sustained injuries to the foot which proved fatal. Inspection and inquiry made.
7	12th April, 9 A.M.	Budroochuck mine	Budroochuck Coal Mining Co., Ltd.	Iakhan Bhor, (m.), 5.	Coal	Not employed.	Deceased was found drowned in a disused boiler feed tank containing 4 feet of water. Inspection and inquiry made.
8	13th May, 1-30 P.M.	South Keshalpur mine, Katraagarh P. O., Bihar and Orissa.	B. N. Mukherjee & others.	Gahni Kumarin, (f.), 50.	Coal	Not employed.	Deceased was found buried beneath a fall of rock from the side of an abandoned quarry. The quarry was properly fenced. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents during the year 1931—contd.

Serial number.	Date and hour of accident.	Name and situation of mine.	Name of owner.	Name, sex, age and occupation of person killed.	Name of mineral worked.	Reason for exclusion.	Cause of accident and remarks.
<b>FATAL ACCIDENTS NOT INCLUDED IN THE STATISTICS—(24 deaths)—contd.</b>							
9	15th May, 11 A.M.	Devadane, Chiprupallee P. O., Madras.	Vizianagram Mining Co., Ltd.	Sanapathi Achamma, (f.), 5.	Manganese.	Not employed	Whilst employed in picking out ore from a dump of rock refuse a workman was severely injured by loose stone sliding down from above. A child accompanying him was buried and killed.
10	6th June, 4 A.M.	Kargali mine, Bokaro P. O., Bihar and Orissa.	Secretary of State for India.	Budhu, (m.), 25, Coal-cutter.	Coal	Not an accident.	A miner was found dead in the underground workings of the mine. Death was ascribed to natural causes. Inspection and inquiry made.
11	8th June.	Pootkee mine, Kununda P. O., Bihar and Orissa	Eastern Coal Co., Ltd.	Kanai Hari, (m.), 38.	Coal	Not employed.	Deceased was found drowned in a shallow pool of water on the surface. Inspection and inquiry made.
12	18th June, 10 A.M.	Ghorawari mine, Junnordeo P. O., Central Provinces.	Hirdagarh Collieries, Ltd.	Chhotelal Amerlal, (m.), 14.	Coal	Not employed.	Deceased was riding on a loaded tub which was being pushed along a surface tramline by two trolleyman. The tub collided with some stationary tubs and deceased was thrown to the ground receiving fatal injuries. Inspection and inquiry made.
13	22nd June, 3 P.M.	Junnordeo No. 2 mine, Junnordeo P. O., Central Provinces.	R. S. H. Verma & M. Kariyalal, Ltd	Jhadoo Mahra s/o Amba, (m.), 24.	Coal	Not employed.	A loaded tub was being pushed along a surface tramway when a young child, who unknown to the trolleyman was playing nearby, was knocked down by the tub and sustained injuries which proved fatal. Inspection and inquiry made.
14	18th July, 12 NOON.	Murwara mine, Katni P. O., Central Provinces.	G. H. Cook & Sons.	Tijish, (f.), 50.	Limestone	Not employed.	Deceased was found drowned in a quarry. Inspection and inquiry made.
15	28th July, 12 NOON.	Tikuri mine, Katni Cement Factory P. O., Central Provinces.	Katni Cement and Industrial Co., Ltd.	Dhirajia Bhui- yan, (f.), 25.	Limestone	Not employed.	A woman was digging for white clay in a spoil heap when a portion of the heap collapsed and buried her. When extricated she was dead. Inspection and inquiry made.
16	26th August, 3-30 P.M.	Datia mine, Junnordeo P. O., Central Provinces	Amalgamated Coal- fields, Ltd.	Lilabhai, (f.), 6.	Coal	Not employed.	A child crawled through a wire fence and fell into a boiler feed water tank containing water 4' 6" deep; she was found drowned. Inspection and inquiry made.



17	28th August, 4-30 P.M.	Jamadoba mine, Jalgora P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ltd.	Gopal Mahato, (m.), 58.	Coal	Not employed.	Deceased climbed the wall, 4 feet high, fencing an air-shaft, 33 feet deep, and was cutting grass inside the fence, when he fell down the shaft. He received internal injuries to which he succumbed a few hours later. Inspection and inquiry made.
18	7th September.	Murnlidib mine, Mohuda P. O., Bihar and Orissa.	Bengal Coal Co., Ltd.	Atul Chandra Sahani, (m.), 26, Register clerk.	Coal	Not a mining accident	Deceased was found drowned in a reservoir containing water 12 feet deep. Inspection and inquiry made.
19	11th September, 8-30 A.M.	Jamuria mine, Charanpur P. O., Bengal.	Equitable Coal Co., Ltd.	Kamala Bilaspur, (f.), 34, Loader.	Coal	An accident under the Indian Railways Act.	Deceased was run over and fatally injured by a light engine at a level crossing on a railway siding. Inspection and inquiry made.
20	9th October, 2 P.M.	Bhuggutdih mine, Jharia P. O., Bihar and Orissa.	Bengal Nagpur Coal Co., Ltd.	Behary Rajwar, (m.), 62, Coal-cutter.	Coal	Not an accident.	Whilst an old and decrepit miner was at work underground he was attacked by illness, and a few hours later he died of heart failure. Inspection and inquiry made.
21	13th October, 7 A.M.	Kustore (Alkusa Section) mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ltd.	Lerroo Chamar, (m.), 27, Coal-cutter.	Coal	An accident under the Indian Railways Act.	Whilst crossing a broad gauge railway line, deceased was knocked down and fatally injured by an engine pushing a train of two wagons. Inspection and inquiry made.
22	15th November, 7-30 A.M.	Kustore mine, Kusunda P. O., Bihar and Orissa.	Raneegunge Coal Association, Ltd.	Sukor Roy, (m.), 31, Coal-cutter.	Coal	Not a mining accident.	A miner was drowned whilst bathing in a boiler feed water supply tank. The tank was surrounded by a wall more than 3½ feet high and bathing in it was not permitted. A suitable bathing place was provided close by. Inspection and inquiry made.
23	14th December, 2 A.M.	Dhemo Main mine, Sitarampur P. O., Bengal.	Dhemo Main Collieries, Ltd.	Dhaneswar Ghatowal, (m.), 19, Haulage engine driver.	Coal	Not a mining accident.	Whilst sleeping near a fire on the verandah of a dwelling a workman's clothes caught fire. He was severely burnt and subsequently died of his injuries. Inspection and inquiry made.
24	19th December, 5 P.M.	Erkerga Hill mine, Ganwan P. O., Bihar and Orissa.	.....	Sitwa Goar, (m.), 3.	Mica	Not employed.	Whilst stealing mica from an old abandoned pit, a man was buried by a fall of debris and received fatal injuries. Inspection and inquiry made.

Table

## Statement of fatal and serious accidents in and about Mines

Province.	District and Mineral field.	FATAL							
		Number of separate fatal accidents.	Number of deaths.						Total.
			Under-ground.		Open workings.		Surface.		
			Males.	Females.	Males.	Females.	Males.	Females.	
Assam	Lakhimpur—M a k u m coalfield.	4	3	...	...	...	1	...	CO 4
	Naga Hills—N a z i r a coalfield.	...	...	...	...	...	...	...	...
Bengal (and part of Bihar and Orissa).	Raniganj coalfield	19	26	15	...	...	17	2	69
Bihar and Orissa	Jharia coalfield	80	67	16	...	...	3	1	87
	Bokaro „	7	4	...	...	3	1	...	7
	Karenpura „	5	5	...	...	...	1	...	6
	Giridih „	4	2	1	...	...	1	...	4
	Hingir Bampur coalfield	..	...	...	...	...	...	...	...
Central Provinces	Chanda	1	1	...	...	...	...	...	1
	Chhindwara—P e n c h Valley coalfield.	14	9	1	...	...	3	1	14
Punjab	Salt Range coalfield	2	2	..	...	...	...	...	2
Total (Coal)		156	119	33	..	2	27	4	185

## DIX II.

## No. 2.

regulated by the Indian Mines Act, during the year 1931.

ACCIDENTS.				SERIOUS ACCIDENTS.													
Death rate per 1,000 persons employed.				Number of separate serious accidents.	Number of persons seriously injured.									Serious injury rate per 1,000 persons employed.			
Underground.	Open workings.	Surface.	Underground, Open workings and Surface.		Underground.		Open workings.		Surface.			Underground.	Open workings.	Surface.	Underground, Open workings and Surface.		
					Males.	Females.	Males.	Females.	Males.	Females.	Total.						
<b>AL</b>																	
2.03	...	1.48	1.39	48	30	...	8	...	15	1	49	20.33	4.17	23.67	17.07		
...	...	...	...	8	2	...	...	...	1	...	8	5.21	...	4.17	4.81		
1.18	...	1.32	1.16	76	60	16	1	...	6	3	86	2.09	0.88	0.63	1.66		
1.86	...	0.19	1.29	1.6	139	16	1	...	33	3	192	3.48	0.63	1.67	2.84		
2.25	0.23	0.27	0.50	24	9	...	5	3	5	2	24	5.07	0.94	1.67	1.71		
3.69	...	1.34	1.92	5	1	1	...	...	3	...	5	1.47	...	4.03	1.60		
0.52	...	0.59	0.53	34	25	3	...	...	6	...	34	4.69	...	3.54	4.50		
...	...	...	...	1	1	...	...	...	...	...	1	8.55	...	...	5.72		
0.56	...	...	0.41	2	2	...	...	...	...	...	2	1.11	...	...	0.82		
2.31	...	2.16	2.26	29	18	6	...	...	6	...	30	5.55	...	3.24	4.85		
8.20	...	...	2.03	12	9	...	...	...	4	...	13	14.83	...	10.58	13.20		
1.54	0.15	0.67	1.17	420	296	42	10	3	79	9	439	3.43	0.99	1.91	2.77		

Table

## Statement of fatal and serious accidents in and about Mines

Province.	District and Mineral field.	Number of separate fatal accidents.	FATAL							
			Number of deaths.						Total.	
			Under-ground.		Open workings.		Surface.			
Males.	Females.	Males.	Females.	Males.	Females.					
										<b>M ANGA</b>
Bombay . . . . .	.....	...	..	...	...	...	...	...	...	...
Central Provinces . . . . .	.....	...	...	...	...	...	...	...	...	...
Madras . . . . .	.....	...	...	...	...	...	...	...	...	...
	Total (Manganese Ore)	...	...	...	...	...	...	...	...	...
										<b>LEAD</b>
Burma . . . . .	Northern Shan States .	5	4	...	...	...	1	...	...	5
										<b>TIN AND</b>
Burma . . . . .	.....	12	4	...	11	4	1	...	...	20

## DIX II—contd.

## No. 2—contd.

regulated by the Indian Mines Act, during the year 1931—contd.

ACCIDENTS.				SERIOUS ACCIDENTS.											
Death rate per 1,000 persons employed.				Number of separate serious accidents.	Number of persons seriously injured.							Serious injury rate per 1,000 persons employed.			
Underground.	Open workings.	Surface.	Underground, Open workings and Surface.		Underground.		Open workings.		Surface.			Underground.	Open workings.	Surface.	Underground, Open workings and Surface.
					Males.	Females.	Males.	Females.	Males.	Females.	Total.				
<b>NESE ORE</b>															
...	...	...	...	9	..	...	5	2	2	...	9	...	7.01	6.80	6.97
...	...	...	...	12	1	..	4	1	5	1	12	1.42	0.70	8.61	1.26
...	...	...	...	1	...	..	1	...	...	...	1	...	1.50	...	1.58
...	...	...	...	22	1	...	10	3	7	1	22	1.42	1.42	3.79	1.84
<b>ORE</b>															
1.21	...	2.07	1.34	89	84	..	...	...	5	...	89	26.01	...	10.35	2.82
<b>WOLFRAM ORE</b>															
2.40	3.70	3.25	3.36	19	1	...	7	...	13	...	21	0.60	1.76	12.21	3.52

Table

## Statement of fatal and serious accidents in and about Mines

Province.	District and Mineral field.	Number of separate fatal accidents.	FATAL							
			Number of deaths.							
			Under-ground.		Open workings.		Surface.		Total.	
			Males.	Females.	Males.	Females.	Males.	Females.		
Baluchistan	Zho b District	1	1	...	...	...	...	...	1	CHROMITE
Bihar and Orissa	Singhbhum	2	3	...	...	...	...	...	3	COPPER
Bihar & Orissa	.....	3	1	...	2	...	...	...	3	MI
Madras	.....	...	...	...	...	...	...	...	...	
	Total (Mica)	3	1	...	2	...	...	...	3	
Punjab	Salt Range	2	1	...	...	...	1	...	2	SA

## DIX II—contd.

## No. 2—contd.

regulated by the Indian Mines Act, during the year 1931—contd.

ACCIDENTS.				SERIOUS ACCIDENTS.											
Death rate per 1,000 persons employed.				Number of separate serious accidents.	Number of persons seriously injured.							Serious injury rate per 1,000 persons employed.			
Underground.	Open workings.	Surface.	Underground, Open workings and Surface.		Underground.		Open workings.		Surface.		Total.	Underground.	Open workings.	Surface.	Underground, Open workings and Surface.
					Males.	Females.	Males.	Females.	Males.	Females.					
<b>ORE</b>															
22-22	...	...	5.13	...	...	...	...	...	...	...	...	...	...	...	...
<b>ORE</b>															
2-36	...	...	1.71	...	...	...	...	...	...	...	...	...	...	...	...
<b>CA</b>															
0-14	0.67	...	0.24	6	6	...	...	...	1	...	7	0.82	...	0.57	0.58
...	...	...	...	1	1	...	...	...	...	...	1	0.99	...	...	0.37
0-12	0.49	...	0.20	7	7	...	...	...	1	...	8	0.83	...	0.40	0.54
<b>LT</b>															
1-03	...	2.65	1.47	15	8	4	...	...	3	...	15	12.35	...	7.94	10.09





DIX II—*contd.*No. 2—*contd.*regulated by the Indian Mines Act, during the year 1931—*contd.*

ACCIDENTS.				SERIOUS ACCIDENTS.											
Death rate per 1,000 persons employed.				Number of separate serious accidents.	Number of persons seriously injured.						Serious injury rate per 1,000 persons employed.				
Underground.	Open workings.	Surface.	Underground. Open workings and Surface.		Underground.		Open workings.		Surface.		Total.	Underground.	Open workings.	Surface.	Underground. Open workings and Surface.
					Males.	Females.	Males.	Females.	Males.	Females.					
<b>STONE</b>															
...	...	...	...	4	...	...	4	...	...	...	4	...	27.97	...	27.97
...	0.30	1.71	0.51	1	...	...	...	...	1	...	1	...	...	1.71	0.25
...	1.96	...	0.92	5	...	...	3	...	2	...	5	...	5.89	8.47	4.61
...	0.34	0.69	0.41	10	...	...	7	...	3	...	10	...	1.19	2.07	1.37
<b>NE</b>															
...	0.85	...	0.51	2	...	...	2	...	...	...	2	...	0.85	...	0.51
...	...	2.30	0.40	3	...	...	1	1	1	...	3	...	0.96	2.30	1.20
...	...	...	...	4	...	...	4	...	...	...	4	...	1.63	...	1.57

Table

Statement of fatal and serious accidents in and about Mines

Province.	District and Mineral field.	Number of separate fatal accidents.	FATAL							Total.	
			Number of deaths.								
			Under-ground.		Open workings.		Surface.				
			Males.	Females.	Males.	Females.	Males.	Females.			
United Provinces	.....	1	...	...	1	...	...	...	...	1	<b>STO</b>
	Total (Stone)	4	...	...	3	...	1	...	...	4	
Madras	.....	1	...	...	1	...	...	...	...	1	<b>BAR</b>
	Grand Total (All minerals).	189	188	38	19	6	31	5	227		

DIX II—*contd.*No. 2—*concl.*regulated by the Indian Mines Act, during the year 1931—*concl.*

ACCIDENTS.					SERIOUS ACCIDENTS.										
Death rate per 1,000 persons employed.				Number of separate serious accidents.	Number of persons seriously injured.							Serious injury rate per 1,000 persons employed.			
Underground.	Open workings.	Surface.	Underground, Open workings and Surface.		Underground.		Open workings.		Surface.		Total.	Underground.	Open workings.	Surface.	Underground, Open workings and Surface.
					Males.	Females.	Males.	Females.	Males.	Females.					
<b>NE—<i>contd.</i></b>															
...	1.08	...	0.67	...	...	...	...	...	...	...	...	...	...	...	
..	0.29	0.27	0.29	9	...	...	7	1	1	...	9	...	0.73	0.27	0.64
<b>YTES</b>															
...	10.53	...	6.71	...	...	...	...	...	...	...	...	...	...	...	
1.43	0.46	0.60	0.98	591	397	46	41	7	113	10	618	3.83	0.87	2.03	2.66

## APPENDIX II—concl'd.

Table No. 3.

Statement of fatal accidents in Mines regulated by the Indian Mines Act, during the year 1931, classified according to cause of accident.

Mineral worked.	Number of separate fatal accidents.	Number of persons killed.											Death rate per 1,000 persons employed.					
		Explosions and ignitions of fire-damp.	Falls of roof.	Falls of side.	In shafts.	Suffocation by gases.	By explosives.	Eruptions of water.	Hauiage.	Underground machinery.	Miscellaneous underground.	Surface.	Electricity.	Total deaths.	Underground.	Open workings.	Surface.	Underground, Open workings and Surface.
Coal . . .	158	...	57	38	7	...	20	2	82	1	9	18	1	185	1.54	0.15	0.67	1.17
Lead Silver . .	5	...	2	1	...	...	...	...	...	1	1	...	...	5	1.24	...	2.07	1.34
Tin and Wolfram Ore.	12	...	3	15	...	...	...	...	...	1	1	...	...	20	2.40	3.76	3.25	3.36
Chromite Ore	1	...	...	...	...	1	...	...	...	...	...	...	...	1	22.23	...	...	5.13
Copper Ore . .	2	...	3	...	...	...	...	...	...	...	...	...	...	3	2.36	...	...	1.71
Mica . . .	3	...	...	2	1	...	...	...	...	...	...	...	...	3	0.12	0.49	...	0.20
Salt . . .	2	...	...	...	...	...	...	...	...	1	1	...	...	2	1.03	...	2.65	1.47
Limestone . .	3	...	...	1	...	1	...	...	...	...	1	...	...	3	...	0.34	0.69	0.41
Stone . . .	4	...	...	3	...	...	...	...	...	...	1	...	...	4	...	0.29	0.27	0.29
Barytes . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	10.53	...	6.71
Total 1931 . .	189	...	65	61	8	...	22	2	82	1	12	23	1	227	1.43	0.46	0.60	0.96
Total of preceding year.	217	12	50	68	10	6	26	5	89	1	14	23	3	257	1.48	0.64	0.47	0.96
Difference . . .	-28	-12	+15	-7	-2	-6	-4	-3	-7	...	-2	...	-2	-30	-0.05	-0.18	+0.13	...

## APPENDIX III

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931.

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations, and Rules and Sections of the Act contravened.	REMARKS.
Assam	Lakhmipur	1	2	2	Sections 39 and 40 of the Indian Mines Act, 1923.	
	Burdwan	1	2	2	Sections 28 (1) and (2) of the Indian Mines Act, 1923, and Regulation 149 of the Indian Coal Mines Regulations, 1926, read with Bye-law 95 made under Section 32 of the Indian Mines Act, 1923.	
	Do.	1	1	1	Section 15 of the Indian Mines Act, 1923, read with Regulation 23 of the Indian Coal Mines Regulations, 1926.	
	Do.	1	3	3	Section 15 of the Indian Mines Act, 1923 read with regulations 23 and 24 of the Indian Coal Mines Regulations, 1926.	
Bengal	Do.	1	1	...	Regulation 17 of the Indian Coal Mines Regulations, 1926.	Case dropped as accused could not be traced.
	Do.	1	2	2	Sections 28 (1) and (2) of the Indian Mines Act, 1923, and Regulation 149 of the Indian Coal Mines Regulations, 1926, read with Bye-law 95 made under Section 32 of the Indian Mines Act, 1923.	
	Do.	1	1	1	Sections 23 (1) (d), 23-A and 23 (2), read with Section 23-B of the Indian Mines Act, 1923.	
	Do.	1	1	1	Sections 28 (1) and (2) of the Indian Mines Act, 1923, and Regulation 149 of the Indian Coal Mines Regulations, 1926.	

APPENDIX III—*contd.*

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations and Rules and Sections of the Act contravened.	REMARKS.
Bengal— <i>contd.</i>	Burdwan	1	2	2	Rule 18 made by the Bengal Government under Section 30 of the Indian Mines Act, 1923.	
	Do.	1	3	1	Section 286 of the Indian Penal Code.	Two of the accused were acquitted.
	Do.	1	1	1	Regulation 13 of the Indian Coal Mines Regulations, 1926.	
	Do.	1	1	...	Regulations 103 and 121 of the Indian Coal Mines Regulations, 1926.	Acquitted.
	Do.	1	2	2	Sections 28 (1) and (2) of the Indian Mines Act, 1923, and Regulation 149 of the Indian Coal Mines Regulations, 1926, read with Bye-law 95 made under Section 32 of the Indian Mines Act, 1923.	
	Do.	1	3	2	Sections 23-A and 28(2) of the Indian Mines Act, 1923, read with Rules 9-B and 23 made by the Bengal Government under Section 30 of the Indian Mines Act, 1923, and Regulation 25 of the Indian Coal Mines Regulations, 1926, read with Bye law 31 made under Section 32 of the Indian Mines Act, 1923.	Case against one of the accused was dropped as he could not be traced.
	Do.	1	1	1	Bye-law 82 made under Section 32 of the Indian Mines Act, 1923.	
	Do.	1	1	1	Regulations 82, 84 and 148 of the Indian Coal Mines Regulations 1926.	

APPENDIX III—*contd.*

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations and Rules and Sections of the Act contravened.	REMARKS.
Bengal— <i>concl'd.</i>	Burdwan . . .	1	4	...	Regulation 3 (3) of the Indian Coal Mines Regulations, 1926.	All the accused were acquitted.
	Bhagalpur . . .	1	1	...	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	Case dropped.
	Hazaribagh . . .	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Manbhum . . .	1	2	2	Section 23-A of the Indian Mines Act, 1923, and Regulation 149 of the Indian Coal Mines Regulations, 1926, read with Rule 9 made by the Bihar and Orissa Government under Section 30 of the Indian Mines Act, 1923.	
Bihar and Orissa.	Do. . . . .	1	1	1	Regulations 15 (2), 67 and 138 (1) of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Bye-law 95 made under Section 32 of the Indian Mines Act, 1923, read with Regulation 149 of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Rule 18 made by the Bihar and Orissa Government under Section 30 of the Indian Mines Act, 1923.	

APPENDIX III—*contd.*

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations and Rules and Sections of the Act contravened.	REMARKS.
Bihar and Orissa— <i>contd.</i>	Manbhum . . .	1	2	2	Section 29 (f) of the Indian Mines Act, 1923, read with the Government of India Notification No. M-1055, dated 7th March 1929, and Regulation 53 (1) of the Indian Coal Mines Regulations, 1926, and Rule 9 made by the Bihar and Orissa Government under Section 30 of the Indian Mines Act, 1923, read with Regulation 149 of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	2	1	Regulations 137 (1), 137 (2) and 138 (1) of the Indian Coal Mines Regulations, 1926.	One of the accused was acquitted.
	Do. . . . .	1	3	3	Regulations 67, 69 (1) and 69 (2) of the Indian Coal Mines Regulations, 1926, and Bye-law 42 made under Section 32 of the Indian Mines Act, 1923.	
	Do. . . . .	1	2	2	Regulation 76 (1) of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Rule 96 of the Indian Electricity Rules, 1922.	
	Do. . . . .	1	1	1	Section 15 of the Indian Mines Act, 1923, and Regulations 69, 71 (1) and 71 (2) of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	2	2	Section 29-A of the Indian Mines Act, 1923, read with Regulation 149 of the Indian Coal Mines Regulations, 1926, and Rule 9 made by the Bihar and Orissa Government under Section 30 of the Indian Mines Act, 1923.	



APPENDIX III—*contd.*

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations, and Rules and Sections of the Act contravened.	REMARKS.
Bihar and Orissa— <i>contd.</i>	Manbhum . . .	1	1	...	Rule 17 made by the Bihar and Orissa Government under Section 30 of the Indian Mines Act, 1923.	Acquitted.
	Do. . . . .	1	1	1	Regulation 95 of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Regulation 143 of the Indian Coal Mines Regulations, 1926, read with Bye-law 86 made under Section 32 of the Indian Mines Act, 1923.	
	Do. . . . .	1	1	1	Bye-law 8 made under Section 32 of the Indian Mines Act, 1923.	
	Do. . . . .	1	1	1	Bye-law 77 made under Section 32 of the Indian Mines Act, 1923.	
	Do. . . . .	1	6	3	Regulations 72, 83 and 84 of the Indian Coal Mines Regulations, 1926, and Bye-law 8 made under Section 32 of the Indian Mines Act, 1923.	Three of the accused were acquitted.
	Do. . . . .	1	1	1	Regulation 3 (3) of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Regulation 3 (2) of the Indian Coal Mines Regulations, 1926.	
	Do. . . . .	1	1	1	Regulation 3 (2) of the Indian Coal Mines Regulations, 1926.	
	Singhbhum . . .	1	3	2	Regulations 38 and 86 (1) of the Indian Metalliferous Mines Regulations, 1916, and Rule 9 made by the Bihar and Orissa Government under Section 30 of the Indian Mines Act, 1923.	One of the accused was acquitted.

APPENDIX III—*contd.*

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations and Rules and Sections of the Act contravened.	REMARKS.
Bihar and Orissa— <i>concd.</i>	Singbhum	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Do.	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Santhal Parganas.	1	1	...	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	Case dropped.
	Do.	1	1	...	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	Case dropped.
	Do.	1	2	1	Section 20 of the Indian Mines Act, 1923, and Regulation 13 of the Indian Metalliferous Mines Regulations, 1926.	One of the accused was acquitted.
Bombay	Surat	1	1	1	Regulations 20, 43, 71 and 72 of the Indian Metalliferous Mines Regulations, 1926, and Rule 19 made by the Bombay Government under Section 30 of the Indian Mines Act, 1923.	
Barma	Kyankse	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Mergui	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Do.	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Do.	1	1	...	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	Acquitted.
	Tavoy	1	3	3	Sections 379 and 511 of the Indian Penal Code.	

APPENDIX III—*contd.*

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—*contd.*

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations and Rules and Sections of the Act contravened.	REMARKS.
Burma— <i>contd.</i>	Tavoy . . .	1	1	...	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	Case dropped.
	Do. . . .	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Do. . . .	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Chhindwara . . .	1	4	2	Sections 23 (1) (d), 23-A and 28 of the Indian Mines Act, 1923, read with Regulation 149 of the Indian Coal Mines Regulations, 1926, and Rule 23-A made by the Central Provinces Government under Section 30 of the Indian Mines Act, 1923.	Two of the accused were acquitted.
Central Provinces.	Do. . . .	1	2	2	Regulation 17 of the Indian Coal Mines Regulations, 1926.	
	Do. . . .	1	2	...	Regulation 95 of the Indian Coal Mines Regulations, 1926.	Both the accused were acquitted.
	Do. . . .	1	1	1	Regulations 144 and 146 of the Indian Coal Mines Regulations, 1926, read with Bye-laws 108 and 101 made under Section 32 of the Indian Mines Act, 1923.	
	Do. . . .	1	1	1	Regulation 144 of the Indian Coal Mines Regulations, 1926.	
	Do. . . .	1	1	...	Bye-law 14 made under Section 32 of the Indian Mines Act, 1923.	Acquitted.
Madras . . .	Nellore . . .	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
	Do. . . .	1	1	1	Section 15 (2) of the Indian Mines Act, 1923.	

## APPENDIX III—concl'd.

Statement of prosecutions under the Indian Mines Act, and Indian Penal Code, during the year 1931—concl'd.

Province.	District.	Number of prosecutions.	Number of persons prosecuted.	Number of persons convicted.	Number of Regulations and Rules and Sections of the Act contravened.	REMARKS.
Madras	Nellore . . .	1	1	...	Rule 15 made by the Madras Government under Section 30 of the Indian Mines Act, 1923.	Case dropped.
	Do. . . . .	1	1	1	Rule 15 made by the Madras Government under Section 30 of the Indian Mines Act, 1923.	
	Do. . . . .	1	1	...	Rule 15 made by the Madras Government under Section 30 of the Indian Mines Act, 1923.	Acquitted on appeal.
	Do. . . . .	1	1	...	Rule 15 made by the Madras Government under Section 30 of the Indian Mines Act, 1923.	Case dropped as accused could not be traced.
Punjab .	Attock . . .	1	1	...	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	Case dropped.
	Jhelum . . .	1	1	...	Section 15 (1) of the Indian Mines Act, 1923, read with Regulation 23 (b) of the Indian Coal Mines Regulations, 1926.	Acquitted.
	Banda . . . .	1	1	1	Regulation 3 (1) of the Indian Metalliferous Mines Regulations, 1926.	
United Provinces.	Hamirpur . .	1	1	1	Regulation 3 (2) of the Indian Metalliferous Mines Regulations, 1926.	
TOTAL . . . . .		71	107	76		

## APPENDIX IV.

## Miscellaneous.

## Statement No. 1.

## LIST OF INSPECTION CIRCLES.

No. 1 Circle.	No. 2 Circle.
1. All mines in Baluchistan.	1. All mines in Assam.
2. All mines in Bihar and Orissa except mines in the District of the Santhal Parganas and such mines in the District of Manbhum as lie east of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the District.	2. All mines in Bengal.
3. All mines in the North-West Frontier Province.	3. Such mines in Bihar and Orissa as lie in the District of the Santhal Parganas and in the District of Manbhum east of a line drawn from mile 175 on the Bengal Nagpur Railway to mile 169 on the Grand Trunk Road and continued in a straight line across the District.
4. All mines in the Punjab.	4. All mines in Bombay.
5. All mines in Rajputana.	5. All mines in Burma.
6. All mines in the United Provinces.	6. All mines in the Central Provinces.
	7. All mines in Madras.

## Statement No. 2.

Names of persons to whom first and second class coal mine managers' certificates of competency and surveyors' certificates of competency were granted during the year 1931.

Certificates granted to holders of English certificates of competency.

## (a) FIRST CLASS.

Name.	Number of Indian certificate.	Date of Indian certificate.	Number of English certificate.	Date of English certificate.
Corbett, Leslie Stuart . . . . .	355	13th February 1931	2434	24th January 1930.
Atkinson, Frederick Geoffrey . . . . .	356	Ditto . . . . .	2188	3rd February 1928.
Peasegood, Thomas Brough . . . . .	357	27th February 1931	2262	2nd August 1928.
Weir, John Elder . . . . .	358	Ditto . . . . .	687	12th February 1921.
Lawley, William James . . . . .	359	8th April 1931 . . . . .	1979	17th February 1927.
Brown, Robert . . . . .	360	Ditto . . . . .	2207	3rd February 1928.
Erakine, George . . . . .	361	23rd November 1931	2195	Ditto.
Mountford, Thomas Vincent . . . . .	362	Ditto . . . . .	2445	24th January 1930.
Panda, Bhabagrahi . . . . .	363	20th January 1932 . . . . .	2598	24th July 1931.

APPENDIX IV—*contd.***Miscellaneous—*contd.*****Statement No. 2—*contd.***

Names of persons to whom first and second class coal mine managers' certificates of competency and surveyors' certificates of competency were granted during the year 1931—*contd.*

Certificates granted to holders of English certificates of competency—*contd.*

**(b) SECOND CLASS.**

Name.	Number of Indian certificate.	Date of Indian certificate.	Number of English certificate.	Date of English certificate.
Webb, James William . . . . .	31	8th April 1931 . . . . .	2932	25th January 1929.

**(c) SURVEYORS' CERTIFICATES.**

Taylor, William Alexander . . . . .	1	27th February 1931	3639	18th July 1912.
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Names of persons to whom first and second class coal mine managers' certificates of competency and surveyors' certificates of competency were granted during the year 1931.

**INDIAN CERTIFICATES.****(a) FIRST CLASS.**

Name.	No. of certificate.	Date of certificate.	REMARKS.
Dutt, Manindra Nath . . . . .	208	9th April 1931.	
Banerjee, Santadas . . . . .	209	Ditto.	
De, Abinash Chandra . . . . .	210	Ditto.	

APPENDIX IV—*concl'd.*Miscellaneous—*concl'd.*Statement No. 2—*concl'd.*

Names of persons to whom first and second class coal mine managers' certificate of competency and surveyors' certificates of competency were granted during the year 1931—*cont'd.*

INDIAN CERTIFICATES—*cont'd.*

## (b) SECOND CLASS.

Name.	No. of certificate.	Date of certificate.	REMARKS.
Master, Eussie . . . . .	454	9th April 1931.	
Ganguli, Ajit Kumar . . . . .	455	Ditto.	
Basu, Kamal Krishna . . . . .	456	Ditto.	
Page, William John . . . . .	457	Ditto.	
Chatterjee, Bhuban Mohan . . . . .	458	Ditto.	
Banerjee, Bishnu Pada . . . . .	459	Ditto.	
Diak, John Henry . . . . .	460	Ditto.	
Chaudhuri, Phanindra Mohan . . . . .	461	Ditto.	
Dutta, Kali Das . . . . .	462	Ditto.	
Ghose, Bhagaban Ram . . . . .	463	Ditto.	

## (c) SURVEYORS' CERTIFICATES.

Kapoor, Bal Krishna . . . . .	52	20th January 1932.	
Grewal, Sarwan Singh . . . . .	53	Ditto.	
Sarkar, Amal Krishna . . . . .	54	Ditto.	
Sarkar, Sachindra Kumar . . . . .	55	Ditto.	
Roy Barman, Priya Nath . . . . .	56	Ditto.	
Chakrabarti, Kalish Chandra . . . . .	57	Ditto.	
Mondal, Dhananjoy . . . . .	58	Ditto.	
Roy, Mahadeb . . . . .	59	Ditto.	

## Statement No. 3.

## ORDER.

No. 583Com.—30th January 1931.—Under rule 3 of the Rules for Coal Mines, framed under section 30 of the Indian Mines Act, 1923, and published under notification No. 4788 Com., dated the 29th August 1924, the Governor in Council is pleased to direct that, on and from the 1st April 1932, urinals and latrine accommodation shall be provided on the surface in every coal mine in accordance with the provisions of rules 3, 4 and 5 of the said rules.

E. N. BLANDY,

Secretary to the Government of Bengal.