

Department of Mines, India

REPORT
OF THE
CHIEF INSPECTOR OF MINES IN INDIA

Under the Indian Mines Act (VIII of 1901)

FOR THE
YEAR ENDING 31st DECEMBER

1914

BY

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FROM

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Chief Inspector of Mines in India,

TO

THE SECRETARY TO THE GOVERNMENT OF INDIA,
DEPARTMENT OF COMMERCE AND INDUSTRY.

Dated Dhanbad, 18th June 1915.

SIR,

I HAVE the honour to submit the report upon the inspection of mines in British India for the year ending 31st December 1914.

EXPLANATORY INTRODUCTION.

It is necessary to explain that this is a report relating entirely to the administration of the Indian Mines Act, 1901, and is not a complete statistical review of Indian Mining and analogous industries. It should be remembered in reading the statistics that there must be a considerable output from quarries which are under 20 feet deep; and owing to the exclusion of such places from the scope of the Mines Act, these figures should not be regarded as a complete index to the production of the mineral wealth of the country.

Figures of production of all minerals raised in British India and the Native States, whether from workings under the Act or not, are published annually in the Records of the Geological Survey of India, whilst every five years a Quinquennial Review of the Mineral Production of India is issued by the same Department. The latest review published is that for the years 1904-1908 (Records, Geological Survey of India, Vol. XXXIX). Figures for Mysore, where most of the Indian gold is raised, are given in the report of the Chief Inspector of that Native State, and mineral statistics may also be found in the administrative reports of the various Presidencies, Provinces and States of India.

This report is divided into five sections, *viz* :—

- Section I.—Persons employed.
- „ II.—Output of mineral.
- „ III.—Accidents.
- „ IV.—Prosecutions and additions to the Act.
- „ V.—General remarks.

Section I.—Persons Employed.

During the year 1914 the average number of persons working in and about the mines regulated by the Indian Mines Act was 185,211, of whom 120,071 worked underground and 65,140 on the surface. One hundred and fifteen thousand, one hundred and seventy-four were adult males, 64,179 were adult females and 5,858 were children under 12 years of age. This is an increase of 3,951 workers or 2·18 per cent.

Those employed in coal mines numbered 137,851, which is an increase of 4,809 only over those employed in 1913.

Of this increase 3,319 persons are accounted for in the coalfields of Bihar. The labour-supply in Bengal was almost stationary, and managers, except at

the very end of the year, were considerably embarrassed by shortage of labour, especially at outlying collieries. The shortage is generally attributed to the good harvest of 1913. The managers of most of the collieries in the Central Provinces also would have welcomed a larger labour supply.

At the Assam collieries, where the labour question always has had to be carefully considered, out of a total labour force of 4,259 persons, 1,363 were Makranis, Chinese, and Nepalese. The Company recently have done much to improve the condition of the labour, by building a commodious type of house and by having a fixed shift of ten hours from bank to bank, equal to nine hours' actual work.

Section II.—Output of Mineral.

COAL.

The total output of coal was 15,727,631 tons, an increase of 241,313 or 1.56 per cent. over the output of 1913. This is the smallest annual increase since 1910. In the early part of the year the output was somewhat curtailed by the effects of the floods of the previous year, but the main cause of the smallness of the increase was undoubtedly the war. The market for the very best coals in Bihar and Bengal appears to have remained firm, as they were more or less in demand for war purposes, but the rest of the trade was more or less affected and several of the smaller concerns were shut down.

At the outset, as in every other trade, operations generally were checked, until other industrial concerns were able to arrange finance, which had been thrown into such confusion all over the world.

The first shortage of demand came from Indian consumers, directing small mills, brick kilns and other industrial operations, in which work had been seriously curtailed. As time went on, the railways called for increased supplies for the carriage of troops and munitions of war and considerable demand was also experienced for the bunkering of transports. Owing to the presence at that time of an enemy warship in Eastern waters, the greater portion of this coal was carried by rail. Later on, after the bulk of the troops had left the country, a serious curtailment of export traffic supervened. The fact, however, that no foreign coal could be imported into places like Bombay and Karachi proved advantageous to the Indian coal trade, as mine owners were able to supply railborne coal. Towards the end of the year a large accession of labour accrued to the mines, with the result that large outputs were obtained, as soon as the harvesting season was over.

Of the total output, 15,075,587 tons or 95.85 per cent. were raised in Bihar and Bengal, the percentage of the previous four years being 95.44. The increase in these two provinces was 199,346 which was, in the year under report, less than the increase for the whole of India, which points to the fact that the trade in the other provinces was unaffected by the war. As a matter of fact, except for a small decrease, amounting to 8.87 per cent. in Baluchistan, there were increases in all these other provinces, the percentages being Central Provinces 3.85 per cent., Panjab 6.39 per cent., Assam 12.68 per cent. and North-West Frontier Province (output negligible) 4.44 per cent.

The output per person employed during the year was (a) below ground 178 tons, and (b) above and below ground 114 tons. The figures for the six years preceding were (a) 172 and (b) 110. Taking each group of coalfields separately these figures were as follows:—

Bengal and Bihar (a) 182 and 174, (b) 116 and 111; the Central Provinces (a) 110 and 124, (b) 75 and 86; Assam (a) 160 and 228, (b) 106 and 146; Baluchistan (a) 74 and 70, (b) 48 and 47; and the Panjab and North-West (a) 70 and 49, (b) 47 and 30.

The output in England in 1913 was 332 tons per person employed below ground, and 267 tons per person employed above and below ground.

Recently, there has been a great advance in the use of electricity in the coal mines of Bengal and Bihar for haulage, pumping, ventilation, etc. Over 135 motors, generating over 4,500-horse-power, are now installed.

MICA.

There was a decrease in the output, the first since 1910, 38,189 cwts. having been raised, as compared with 43,650 cwts. in 1913. This is a decrease of 12.51 per cent.

The condition of the trade was fairly good during the first-half of the year, prices being slightly lower than in 1913, which latter year was an exceptionally good one.

The trade suffered severely from the commencement of the war, and the output fell away in consequence.

A large proportion of the demand for this mineral has come from Germany, for use in its huge electrical industries. Certain firms, with large German interests, which were rapidly assuming extensive control of the trade in India and which were large purchasers of mica, have closed down.

The export of mica to other countries in Europe practically was cut off and the industry generally was much hampered by the abnormally high rate which ruled for ocean freights and insurances, brought about by the war. There was considerable difficulty with regard to shipments to America, to which country considerable consignments are despatched direct in normal times, and the American market itself was dull.

In the Nellore District in Madras four mines were relinquished and forty were suspended, and the output during the last five months of the year was only 700 cwts. as compared with 4,700 cwts. in the first seven months.

The demand from London for slab mica kept the prices of this grade fairly firm, but the market for splittings, especially for those below the first grade, was much reduced.

MANGANESE.

The output was 555,672 tons. This is a decrease, as compared with that of 1913, of 81,719 tons, or 12.82 per cent., which is considerable. The output, however, kept well above that of 1912 and the two or three previous years. The average price per unit was nine pence or two pence less than in 1913. When war broke out, the Continental markets were closed, and export to America was prohibited, and though there was a rise in price in the last quarter of the year, only isolated cargoes were sold and the rise in price was due solely to enhanced rates of freight, consequent on the shortage of tonnage.

GEMS.

The actual product in carats was considerably higher than in 1913, chiefly owing to the output in sapphires, for there was a decrease of 11,422 carats in rubies. Altogether 304,042 carats were raised, as compared with 278,706 carats, or an increase of 9.09 per cent. The European markets were beginning, before the war, to show signs of improvements, but collapsed entirely afterwards. The Indian market was fairly good in the early months of the year and in July quite good. Afterwards, in India and Burma, although prices kept at a low level, there was a distinct demand and business on quite a reasonable scale went on in the closing months of the year.

GOLD.

The output of the previous year was nearly doubled, being 19,873 ounces, compared with 11,019 ounces, an increase of 80.35 per cent. This was owing to the producing stage having been reached at a second mine in the Anantapur group. The vertical depth at the main shaft of this mine is now over 1,000 feet.

COPPER.

The output was 4,400 tons compared with 3,639 tons in 1913. This is an increase of 20.91 per cent.

WOLFRAM.

There was again an increase in the output, which was 31,526 cwts. compared with 27,520 cwts. This is an increase of 14.56 per cent.

OTHER MINERALS.

An output of 9,280 cwts. of Bauxite is reported this year from the Jabalpur district in the Central Provinces, the mine having been unworked during the years 1910-1913.

For the first time, an output of 16 lbs. of Pitchblende and 200 cwts. of Triplite is shown in the list of minerals raised from mines classed under the Indian Mines Act. Both these minerals were won from a mine in the district of Gaya (Bihar and Orissa).

125,348 tons of Granite were won from quarries in the Amherst district in Burma.

There were increases in iron, slate, clay, fuller's earth, limestone, galena and samarskite and decreases in salt, chromite, corundum, magnesite, tin and steatite.

Section III.—Accidents.

During the year 1914, at mines regulated by the Indian Mines Act, 1901, there were 152 fatal accidents, being an increase of 16, as compared with the number in 1913, and an increase of 22 as compared with the average number of last five years.

These accidents involved the loss of 191 lives. This is a decrease of 20 upon the number of deaths in 1913.

There was no single accident involving a large death roll, as was unfortunately the case in 1913. In one case, however, 6 lives were lost owing to a fall of roof in a coal mine, and in two cases 5 lives were lost, one by an explosion of gunpowder in a salt mine, and the other by an irruption of water in a mica mine. In five cases 3 persons, and in fifteen cases 2 persons, were killed.

Of these 152 accidents I regard (a) 77 as being due to misadventure, (b) 42 to the fault of the deceased, (c) 5 to the fault of fellow workmen, (d) 12 to the fault of subordinate officials and (e) 16 to the fault of the management.

Of the 42 accidents due to the fault of the deceased, 27 were accidents from falls of roof and sides in coal mines, and in nearly every case were due to the deceased person deliberately leaving his proper working place and proceeding to cut coal elsewhere. As a rule either the corner or the side of a pillar is selected in these cases, the coal being much easier to cut than in a gallery, too easy in fact, as the occurrence of the accidents prove. In 18 cases a fence was crossed. The accidents from falls of roof and sides together amounted to 95, and consequently a very substantial decrease in these accidents and the accident rate generally would result if these improper practices could be stopped. For every case in which an accident occurs, there must be many more cases, in which the wrong-doer has procured his easily got coal with impunity. That at some mines the practice is much more common than at others, an examination of the pillar corners and sides will show. At all but some of the smallest mines, Rules under Section 21 are now established, one of which reads as follows:—"No person shall work in any place other than the one in which he has been ordered to work by an officer of the mine or by any person in whose charge he has been placed by an officer of the mine." Another reads:—"No person, either above or below ground, shall remove or pass through any fence, or remove or pass any danger-signal unless so especially authorised by the manager or other officer empowered by the latter in that behalf."

Although reasonable time must be allowed for bringing employees into line under these rules, still the breach of either of these two leads so frequently to loss of life, that managers should discharge their responsibilities under Section 14(2) of the Mines Act by taking proceedings against any miner found breaking them. Under another rule an official is bound to report to the manager or under-manager any such case he may detect, and this obligation should be clearly impressed upon such officials.

The whole question of accidents occurring through the fault of the deceased is very much a question of discipline, and appointing subordinate officials who have the capacity to command obedience. It is important too that supervision should not be relaxed at night, and that night and day officials should relieve each other underground, so that miners may not be left to themselves in a mine at any time. Inexperienced miners especially should be carefully watched.

In many cases falls of roof and side are due to neglect to recognise slips, cleats and faults, which all tend to loosen ground.

There was a large increase in the total number of deaths from falls of roof and sides, the number being 95, as compared with 78.

Next to falls of roof and side, by far the largest number of accidents which occurred were connected with haulage. They were 21 in number. Carelessness on the part of the hookmen, in failing to couple up all the tubs, or the failure of couplings, either by fracture or accidental detachment, are the most frequent causes of haulage accidents in Indian mines. The former cause can generally be corrected by proper stop blocks or runaway points. On steep haulage planes a separate rope or chain, attaching the first tub to the last, is a safeguard against faulty couplings.

The death-rate per thousand persons employed was 1.03, while that of the preceding five years was 1.17. At coal mines only these figures were 1.05 and 1.34, and at mines other than coal 0.97 and 0.69. At coal mines in England during the ten years ending with and including 1913, the death-rate per thousand persons employed varied from 1.17 (lowest) to 1.69 (highest).

The death-rate per million of tons raised at coal mines only was 9.22 while that of the preceding five years was 11.96. At coal mines in England during the ten years ending with and including 1913, the death-rate per million tons raised varied from 4.29 (lowest) to 6.37 (highest).

Of the 191 persons killed 166 were males and 25 were females.

The deaths occurring in each class of mine worked were as follows:—

One hundred and forty-five in coal mines, 12 in wolfram mines, 10 in mica mines, 7 in manganese mines, 6 in copper mines, 5 in salt mines, 4 in gold mines, 1 in iron mines and 1 in ruby mines.

One person lost his life by explosion of fire-damp, 48 by falls of roof, 47 by falls of side, 22 in shafts, 1 by suffocation by gases, 16 by explosives, 8 by irruptions of water, 21 by haulage, 10 by other accidents underground and 17 on the surface.

A list of these accidents appear in Appendix II, Table I. In addition to them there were 35 others, causing the death of 36 persons. These also appear in Appendix II, Table I, but are listed separately, a reason being given in each case for their exclusion from the statistical tables.

In the Bengal and Bihar coal mines, where most of the statistical accidents occur, there were 119 deaths compared with 162 in 1913.

Each accident is briefly described in Appendix II, Table I, but the following are reported on at greater length. The numbers refer to the numbers in the appendix.

EXPLOSIONS OF FIRE-DAMP.

No. 1.—Assam Railways and Trading Company's Ledo coal mine.

This accident took place in a mine where a highly inclined seam of soft friable coal, 100 feet thick, is being worked on a "chambering" method. The coal is very liable to spontaneous combustion, and, as fires are of frequent occurrence, safety lamps are used. The seam is worked in three stages, commencing from the roof. The finished size of a "chamber" is about 50 feet square by 30 feet high. When these dimensions have been attained, and often sooner on account of incipient fire, the entrances to a "chamber" are sealed off and work commenced on a new "chamber" further back.

In the case under comment a "chamber" had been sealed off and a new "chamber" had been excavated. The barrier of unworked coal between the "chambers" was 15 feet thick.

A miner was engaged in lighting the fuses of dynamite shots in the new "chamber" by means of a lighted rag, when an ignition of gas took place and he sustained burns, from the effects of which he died six days later. It is probable that gas was generated from the coal by distillation in the old "chamber" and that it leaked through the barrier and accumulated in the new "chamber."

The rag had been lighted by the European assistant foreman, who had opened his safety lamp for the purpose, and who claimed to have tested for gas before charging the shot-holes. It was considered that he had not tested for gas with sufficient care and he was reprimanded. After the accident shot firing in the district was prohibited.

The practice of opening a safety lamp for the purpose of firing a shot is undesirable. Arrangements have since been made to fire all shots at this company's mines electrically.

FALLS OF ROOF AND SIDES.

No. 13.—Bengal Coal Company, Limited's Dhobidih coal mine.

In the last report attention was drawn to the large number of accidents which occurred while goafing operations, or the getting of pillars, was in progress. This accident, as the result of which six persons were killed, happened while such operations were being carried on.

It is illustrated by plan A. It will be seen that the goaf was traversed by three faults. The stone fell up to one of the faults, the throw of which was 1' 2", the "downthrown" side being away from the fall. It had been exposed for about six weeks before the accident and for a length of 40 feet. The two others had also been exposed for considerable lengths of time and the presence of all three must have been known to the management.

The method of goafing here consisted of gradually reducing the pillars, formed in the first workings, until they were totally extracted, timber props being set as the coal was removed.

About 10 A.M. on the morning of the accident, a gang of work persons, seventeen in number, were set to work at a pillar, which was then about 6 feet square, by a sirdar who, after inspection, had declared the place safe. The gang was accompanied by a timberman and a roof-tester who were instructed to set props as required. At noon the overman visited the place. He expressed himself satisfied, and he then left, having told the roof-tester to call the sirdar if the roof began to "weight". He stated that the pillar of coal was then about 4 feet square.

About 4 P.M. the pillar, having been thinned to about three feet square, collapsed, and the miners hurried away to one of the adjoining galleries. After waiting a little time and hearing nothing, the roof-tester and the head of the gang went into the goaf to make an inspection. Upon their return it was decided to attempt to get the fallen coal. Six persons, four men and two women, accordingly went into the goaf, to load up the coal, and shortly afterwards the roof, measuring about 25' by 16' x 5' 3" thick, fell and killed them outright.

While their bodies were being recovered, a large fall occurred at the middle-fault, showing that the first fall had shaken the whole goaf.

The hade of the fault was 50°. On its face was a deposit of mud which had been left behind by the percolation of water. Another side of the fall was fairly regular in outline and was made up of a succession of joints, while the remaining sides exposed a considerable number of joints. All these joints showed water stains on their faces. The stone fell from a horizontal parting in the sandstone and exposed a level roof.

There was no percolation of water through the roof stone at the time of the accident.

With regard to the question of support, according to the statements of witnesses, there were ten or eleven props under the fallen area, but a careful

search under the fallen stone revealed only eight, of which one was broken. The other seven must have been swayed out. Their approximate position is shown on the plan.

The following facts stand out. When the accident occurred these miners had been working for nearly five hours without being overlooked by any official. The sirdar was there at 10 A.M. and the overman at noon. The dangerous occupation of goafing should be, and I am glad to say generally is, supervised by a sirdar, who has no other work to do. A skilled and observant official would have understood the meaning of the collapse of the pillar, he would have withdrawn the work people to a place of safety and not have allowed them to re-enter the goaf.

It is well known that the presence of a fault is liable to affect the soundness of the roof. The presence of this fault, however, was ignored, and only a few props were set to support the roof.

The course of action that should have been followed by the manager, after the presence of the fault had been discovered, was to leave a large pillar of coal under both sides of it. Failing this, he should, as the fault had been exposed over such a length, have set cogs under the upthrow side, as the pillar was being reduced, and on no account should the pillar have been reduced to such small dimensions.

IN SHAFTS.

No. 78.—Cape Copper Company, Limited's Rakha Hills copper mine.

In this case a winding engineman, having received a signal to lower the skip down a shaft, raised it instead up into the sheaves. The brake nuts were sheared and the skip ran wild down the skipway, with the result that one man was killed and three other persons were injured.

The headframe on top of the shaft was much too low. When the skip was being tipped, there was not more than a foot of rope between the top of the capping and the sheave. With such a small clearance as this, an engineman, even when driving a small self-contained hoist, as was the engine in question, has hardly a second to see that he is driving in the wrong direction. Since the accident a higher frame has been erected. A stop gate at the top of the shaft has also been fixed. This stop gate was being made, when the accident occurred.

Formerly low headframes were the rule at Indian mines, but there has been a marked improvement in this matter during recent years.

No. 84.—Upper India Coal Company's North Singaran coal mine.

Loss of life on this occasion was due to neglect to fence the top of a sinking shaft. The shaft was 50 feet deep, and persons were raised and lowered, and spoil and water were raised, by means of a string of coolies hauling a rope, which passed over a pulley, suspended from a timber cross frame. The shaft was fenced permanently on three sides, but was unfenced on the fourth side. During an interval for a meal in the night shift, one of the coolies, a woman, walked towards the shaft and fell into it. She received injuries from which she died shortly afterwards.

A prosecution was initiated against the manager, as detailed in section IV of this report.

It may be pointed out that all working shafts have to be fitted with fences. Naturally they have to be moved out of the way, when the cage or bucket reaches the top of the shaft, but they must be so arranged that some other contrivance takes their place. In cage pits this is easily done, by means of sliding gates, which the cage itself actuates, but the problem is a little more intricate in the case of sinking or other bucket shafts. A common and satisfactory arrangement for covering the top of sinking shafts in the Indian coalfields is a fenced trolley which runs on rails laid over the top of the shaft. A stop block is provided to prevent the withdrawal of the trolley beyond the limit of the permanent fences on the three other sides of the shaft, and the fence of the trolley becomes the fence on the fourth side. By means of a subsidiary trolley

running on rails laid on the shaft trolley, the kibble or bucket can be transported to and from the dump. The arrangement is illustrated in Plate A.

No. 88.—Barakar Coal Company, Limited's Loyabad coal mine.

This accident occurred while a shaft, which was then 60 feet deep, was being sunk.

The apparatus for covering the top of the shaft consisted of a pair of balanced doors, which, when open, formed a fence on two sides of the shaft, and over which, when closed down on top of the shaft, ran a trolley on rails for receiving the loaded bucket and conveying it to the spoil heap. As a rule it is only when the trolley has to receive the bucket that such doors are closed. They have to be open to allow the rope to travel up and down in the shaft, and for ventilation.

Sinking shaft doors like these conform to the latest and best mining practice, but it must be obvious that, to make the arrangement complete from the point of view of safety, the other two sides of the shaft must be properly fenced, and the trolley line laid at right angles to the doors, when open, as shown in plate B. In the case under review there were no fences on the other two sides of the shaft, and the rails were laid parallel to the doors when open. If, at any time, a trolley was pushed over the shaft when the doors were open, the trolley would fall into the shaft. All that was done to prevent such an occurrence was that a banksman was posted to see that the trolley was not pushed over the shaft until the doors were shut and an order was given that the doors were to be kept shut, except when the rope was travelling. At the inquiry which was held there was evidence that this order was not always obeyed and that the doors had been open when the rope was at rest down the shaft.

For a considerable portion of the working shift the shaft was therefore unfenced on two sides.

Before the apparatus had been in use many days, a trolley, at night, was pushed on to the shaft while the doors were open, fell down the shaft, killed two men at the bottom and injured two others. There were fifteen sinkers in the shaft bottom, and it is remarkable that eleven of the fifteen escaped without injury. The banksman absconded immediately.

The manager stated that the arrangement was temporary and that as soon as his pit top arrangements were more forward, he had intended to lay the rails at right angles to the doors and fence the other two sides of the pit.

In England no sinkers would have consented to work for a single day in a shaft bottom with such an arrangement at the top.

Apart from the trolley, anything else, or anybody, could have fallen down this shaft, when the doors were open.

It was considered that the rule with regard to fencing the tops of shafts had been broken and a prosecution was initiated against the manager, as detailed in section IV of this report.

No. 93.—Bhalgora Coal Company, Limited's Simlabahal coal mine.

This accident was due to the use of machinery of insufficient strength. It occurred at a sinking pit where a scaffold, on which was a pump and three ranges of pipes, with a total estimated weight of 3.14 tons, was suspended directly from the barrel of a single purchase hand winch, which was geared at 24 to 1. The pump, etc., was being gradually lowered down the shaft, additional pipes being fitted at the surface as it descended. To enable a pipe to be correctly fitted, it became necessary to raise the scaffold a few inches, and whilst eight men were exerting power at the winch, both handles broke and the pump, etc., fell to the bottom of the shaft. Two men, who were standing on the scaffold at the time, were killed. Investigation showed that the load was not suspended freely and the pump scaffold was scraping against the walls of the shaft. The friction thus caused must have increased the strain on the winch until collapse occurred.

I consider that the factor of safety of this winch was far too small, and that the agent, under whose instructions it was used, took an unjustifiable risk.

IRRUPTION OF WATER OR FALLING INTO WATER.

No. 107.—Johar Mull's and Sunder Mull's Tadaiya mica mine.

In the early morning of the 5th November, five persons were drowned by an inrush of water. The inrush came from old workings, as shown on plan B, and filled the lower workings of the mine.

There were about sixty persons below ground at the time, twenty-eight of whom were caught by the rushing water, some being totally submerged. All the bodies were recovered on the third day after the accident, having been found at the place indicated on the plan. The place where the water broke in is also shown.

A large quantity of fine mica "deads" were carried into the mine with the water and deposited on the floor of the drifts.

All the evidence at the inquiry went to show that no communication had been made previously and that no work had been done in the drift where the water broke in since the previous June. A close examination failed to disclose any indication of where the ground between the old and the present workings had given way, but the remains of three shot holes, at distances varying from 2 to 4 feet from the actual point of contact, were seen, and these holes had been made from the side of the present workings.

It is difficult to believe that no communication had been made previous to the irruption, because the pressure of water in the old workings had in all probability decreased since the termination of the rains, and if the barrier, assuming there was one, was capable of withstanding the pressure of water in June, it was capable of withstanding it at the time the irruption occurred. The theory, which is quite reasonable, advanced by the inspector who held the inquiry, was that the drift ceased to be worked because a small holing, or merely a large fracture by the last round of shots, had been made into the old workings, that the compact nature of the fine "deads" deposited there was sufficient at the time to resist the pressure of water, but that, as time went on, percolation had worn a path through the "deads" and reduced its resisting power to the point of collapse.

Little or no attempt appears to have been made by the management to locate the position of these old workings, either by a direct search or by boring. The agent admitted that they communicated with the present workings at a point near the mine entrance, shown on the plan, and that, having entered them by way of a strike drift, he had travelled a short distance down a dip road, but had refrained from proceeding further as, he alleged, the sides were bad. There is no reason why the sides should not have been dressed and the exploration of the working completed, when their exact location could have been determined.

HAULAGE.

No. 111.—Equitable Coal Company, Limited's Dishargarh coal mine.

This accident which is illustrated by plan C occurred on a haulage plane (A) which is belowground throughout its length, an electric winding engine being placed in a gallery at (B). The engine hauls the train of tubs up past the points at (C) and the train is then let down by the engine to the shaft. A buffer is placed at (D), to prevent the tubs being hauled into the engine-house. A man, known as the rider, was in charge of the train and rode up and down on it, and the engineman was warned of the arrival of the train at the top of the plane by the rider, who had to jump off the train at (C) and actuate an electric signal (E). The signalling apparatus consisted of two bare wires, extending from the bottom end of the plane to the engine-house, where there was a bell, and the method of signalling was for the rider to grasp the two wires with one hand and with the other saw a copper knife across them to make contact.

There was no light at (C), except the very dim light afforded by a safety lamp carried by the rider.

On the occasion of the accident, the train was being drawn up past the points at (C). The rider, it appears, on this occasion, had not ridden up on the train, but had stationed himself near (C), to await its arrival. Just as it arrived, he knocked over his safety lamp and had to grope in the dark to find the electric wires. Before he could do so, the train collided with the buffer with such force that the rope, which was $\frac{3}{4}$ inch plough steel, with a breaking strain of 25 tons, broke and the train ran wild. It became derailed at the points and crashed into a prop at (F), which it knocked out. A coolie, who had taken refuge behind the prop, had his leg broken, and died three hours afterwards.

The manager attributed the accident to the man not riding on the train. Why a person when jumping off a train should be less likely to lose his light than a man standing is not understandable. It is unreasonable for a man to have to jump off a train, find the wires only by the aid of a safety lamp and give a signal by the method mentioned, especially in view of the fact that the length of a train is 33 feet 3 inches and the distance between the points and the buffer is only 64 feet.

It transpired at the inquiry that previous collisions between the buffer and the train had occurred.

Since the accident the vicinity of the points has been illuminated by electric light, a man has been stationed to signal and alter the points, which latter are now actuated by a lever. He is sheltered in a manhole cut for the purpose. A proper instrument for connecting the signal wires has been provided. This is how work should be done at all important haulage junctions underground.

No. 115.—Lakorka Coal Company, Limited's Lakorka coal mine.

Considering the large increase in the use of mechanical haulage it is gratifying to note that there has not been a commensurate increase in the number of accidents caused by tubs running uncontrolled from the tops of haulage slopes. The improvement is directly due to the use of arrangements such as runaway switches. During the year the use of such appliances at coal mines became compulsory under Special Rule No. 30.

In the instance under comment a miner, cutting side coal near the face of a main dip gallery, received fatal injuries from tubs which, owing to a missed coupling ran uncontrolled from the top of a haulage slope. Investigation disclosed the fact that although runaway switches were provided they were not actuated in the approved manner by a lever and wire or rod from the top of the slope. At the time of a previous inspection the manager had been warned both verbally and by letter that it was courting an accident to rely on the hookman's walking down to the switch and opening and shutting it at the proper time. He had, however, failed to profit by the warning, despite the fact that in the Annual Report for 1913 it was necessary to comment adversely on a similar accident at the same mine.

It also transpired at the inquiry that no buffer stop was provided at the foot of the haulage slope. Such an arrangement, although not required by law, is a necessary and usual safeguard for persons working at the lower end of a haulage slope. Its provision would probably have saved life in this case.

No. 120.—Patel and Company's Kusunda coal mine.

This accident occurred on a haulage slope, while a train of tubs was being drawn up. Owing to bad design there was a double curve at the top of the slope, and, as derailments occurred frequently, it had become the practice for an attendant to ride on the front tub and throw his weight on the side of the tub, as it passed round the curve. On this occasion the deceased made some mistake and was crushed to death between the tubs and the side of the road. The management were aware of the practice, which is a dangerous one. It should not be permitted under any circumstances.

Riding, for any purpose, on a train of tubs actuated by ordinary main rope haulage is to be deprecated.

SUNDRIES UNDERGROUND.

No. 133.—Bengal Coal Company, Limited's Sodepur coal mine.

While three men were engaged in repairing a joint in the delivery pipe of an underground electric pump, two of them received a shock that rendered them unconscious. The third called out to a passer-by for assistance and, when he arrived, they both tried to drag the men away from the pipe. In their efforts they too were rendered unconscious. Another passer-by had heard the shout for assistance and, going at once to the place, found the four men lying unconscious on the ground. Fortunately he made no attempt to touch them, and had presence of mind enough to cut out the switch, which was situated some distance away. Then he returned and saw that one man was alive. He drew him away from contact with the other men and went to call for assistance.

The manager and electrical engineer arrived shortly afterwards and found that the bodies of two men were still in contact with the pipe, the third man's body being clear of it. Artificial respiration was tried without success.

It was then found that one of the three cables, which were carrying current to the pump, had fallen off its insulator and come in contact with the earth wire, causing partial fusing of both. These three cables were originally part of a three core unarmoured cable, whose braiding had become defective, causing the wires to be separated. An examination of them by the Inspector of Mines, who inquired into the accident, revealed defective insulation in many places. These cables carried an alternating current of 20 amperes at 500 volts, to supply energy to a 20-H.-P. 3-throw pump.

The fall of the cable was probably due to a thin piece of coal, falling from the weathered side of a pillar of coal and bringing the cable in contact with the earth wire. The current passed along the earth wire to the pump, and back along the pipe to where the men were at work, and went wholly or partially to earth through the bodies of the men. That it did not pass to earth through the suction pipe, which was partly immersed in water, is of considerable electrical interest as showing the high resistance offered by pit water to the passage of an electric current. A similar feature was observed on the occasion of an accident in the Jharia coal-field at the end of 1913.

The proper course of the current was along the earth wire, and if this had been of ample sectional area to carry the current to earth, and so fulfilled its function, the accident would not have happened.

The sectional area of one cable is .06 sq. inches whereas the area of the earth wire for its major length is only .006648 or 10 times smaller. The comparative carrying capacity of the earth wire was still further reduced from the fact that it was composed of iron, a material with only one-fifth of the conductivity of copper. It will thus be realised how inadequate the earth wire was and the reason the current sought the passage through the pipe.

The Electrical Engineer to the Company admitted that he made no calculations whatever as to the suitability of the earth wire. He was told by the manager to put one in, and he unstranded an ordinary galvanized signal wire, having 7 strands of 13 S. W. G., and used only one of the wires, although he could have used the complete wire if he had wished, or any other wire for which he cared to requisition.

All the joints were electrically and mechanically sound. The earth plate, buried at the surface to a depth of 4 feet in ordinary ground, was only 2' x 1' 8" in size or 3.3 sq. ft. in area, whereas it should have been about 9 sq. ft. in area and have been placed vertically in the ground at a depth of 6 feet, being well packed on all sides with crushed coke.

The Electric Inspector for the Government of Bengal, who inquired into the accident, came to the conclusion that the fatalities were due to an infringement of rule 53 of the Indian Electricity Rules, 1911, which reads "where the pressure is medium or high, the frame of every generator, stationary motor, and so far as is practicable, portable motor, and, the metallic parts (not intended as conductors) of all transformers and regulating or controlling apparatus belonging to the supply, shall be connected with earth by two separate and distinct earth connections."

The motor was connected with earth by one connection only and that was made of No. 13 S. W. G. wire for a length of 854 and of No. 10 S. W. G. wire for the remaining length of 227 feet. This wire was connected with the armouring in the shaft, from the surface end of which a short thick wire led to a galvanized iron sheet $\frac{3}{8}$ " thick $\times 2' \times 1' 8"$ buried 4 feet in ordinary earth.

A good and cheap form of earth wire, for use at a colliery, is an old winding or hauling rope.

NON-STATISTICAL.

No. 29.—Bengal Coal Company, Limited's Murulidih coal mine.

The fatality was due to the thoughtless and improperly supervised manner in which hand shunting is frequently carried out on colliery sidings. The deceased was a girl of eleven years of age. She was underneath a wagon assisting to push it along a siding, and, becoming alarmed by its increasing speed, attempted to get out from underneath by passing between the front and rear wheels. She failed to get clear and was run over, receiving injuries from the effects of which she died a few hours later.

Such accidents are clearly preventable. Hand-shunting should only be carried on under the direct supervision of a responsible male person, who should either himself control the brake or depute a competent person to do so. Children should not be allowed to assist, and pushing should only be done from behind. Only one wagon at a time should be moved.

Section IV.—Prosecutions and additions to the Act.

PROSECUTIONS.

Judgment was given in the following prosecutions during the year. Unless otherwise stated 'rule' means a rule under Notification No. 864-68-20, dated 10th March 1904, being rules for the working of coal mines.

In the last annual report descriptions were given of accidents by irruption of water at the Indian Collieries Syndicate, Limited's Jamadoba coal mine and at the Bengal Bhatdih Coal Company, Limited's Bhatdih coal mine. The manager and a sirdar in each case were proceeded against under rule 5, read with section 22 (1) (e), for not having withdrawn miners from a place found to be dangerous. The cases were dismissed, as the complainant, who had left the country, had not been examined on oath and it was not possible to lay a fresh complaint in the time required by section 24.

In the case of the fatal accident at the Equitable Coal Company, Limited's Chowrahi coal mine, described in the last annual report, the manager was prosecuted under rule 8 of Notification No. 11793-103, dated the 30th December 1908, read with section 22 (2) (b), for not despatching within twenty-four hours to the Magistrate of the district, for transmission to the Chief Inspector of Mines a notice of the accident. He pleaded guilty and was fined Rs. 150.

The managing owner of Sheodan Mul Ram Chandra Marwari's Dhasar coal mine was prosecuted under rule 19, section 13 (1), and rule 47 of Notification No. 2968-82, dated the 21st April 1906, and rule 3 of Notification No. 11793-103, dated 30th December 1908, read with section 22(3)(e), for having inclines unfenced, for working the mine without a qualified manager and for not reporting the reopening of the mine. He pleaded guilty and was fined Rs. 50: in default two weeks' simple imprisonment.

The manager of the Netra Manganese Company, Limited's Netra manganese mine was prosecuted under rules 2, 3 and 5 of Notification No. 6436-152, dated the 2nd September 1911, read with section 22 (3) (e), for not keeping an inspection book, for not keeping a daily report book, and for not keeping a copy of the Act and rules. He pleaded guilty and was fined Rs. 25.

The manager of Messrs. Jessop & Company's Gowangota and Bhandabori manganese mines was prosecuted under rules 3, 5 and 12 of Notification No.

6436-152, dated the 2nd September 1911, read with section 22 (3) (e) for not keeping a daily report book, for not keeping a copy of the Act and rules and for not arranging an efficient system of signalling when blasting operations were being carried on. He pleaded guilty and was fined Rs. 150.

The manager of the Netra Manganese Company, Limited's Malhurki manganese mine was prosecuted under rules 3, 9 and 12 of Notification No. 6436-152, dated the 2nd September 1911, read with section 22 (3) (e), for not keeping up a daily report book, for not providing a box to carry explosives to the mine, and for not arranging an efficient system of signalling when blasting operations were being carried on. He was acquitted on the first count, and found guilty on the other two and fined Rs. 50.

Arising out of an accident at the Upper India Coal Company's North Singaran coal mine, whereby a woman fell down a sinking shaft which was only fenced on three sides, as described in section III of this report, the manager, who was also part owner, was proceeded against under rule 19, read with section 22 (1) (e) for not properly fencing the shaft. He was also proceeded against under section 13 (1) for managing the mine without being qualified to do so. He pleaded that he could not have worked the shaft if it had been properly fenced. The Inspector of Mines, however, testified that many persons work their shaft with proper fences. He was found guilty on both counts and fined Rs. 50: in default two weeks' simple imprisonment.

The owner of the New Baraboni Coal Company's New Baraboni coal mine was prosecuted under section 13 (1), read with section 22 (3) (e) for working his mine without a qualified manager. He was fined Rs. 150: in default rigorous imprisonment for six weeks.

An accident occurred at a mica mine, named Lariatand, whereby two women were killed by a fall of earth. Nine joint-owners were prosecuted under sections 16 and 17, read with sections 22 (3) (e) and 22(2)(b) for failure to report the opening of the mine and for failure to give the prescribed notice of an accident. The case against eight of them was dismissed but the ninth was found guilty and was fined Rs. 100 (Rs. 50 on each count): in default one month's simple imprisonment.

The owner and agent of the Sudamdih Coal Company, Limited, were prosecuted under rule 5 of Notification No. 11793-103, dated the 30th December 1903, read with section 22 (3) (e) for working within 50 yards of a railway without giving 60 days' notice of their intention to do so. The following extracts from the judgment in the case against the agent are given :—

"The first point raised by the accused is that the case is barred by limitation under section 24 of the Indian Mines Act. No Court can take cognizance of a case more than six months after the date of the alleged offence. It is argued that the offence does not consist of working within 50 yards of the railway which would be a continuing offence but only in the first definite extension of work within this 50 yards.

* * * * *

The plea of the accused, therefore, amounts to this 'If I can extend the operations within the prohibited area and can keep this fact dark for six months I cannot be prosecuted, even if I go on working within the prohibited area'.

* * * * *

It is clear from rule 5 that its object is to prevent railways being undermined without due notice being given and both in common sense and in law, the limitation section of the Act will only apply if the Chief Inspector of Mines takes no action within six months of the offence being continued. If the accused's plea were valid, it would reduce the regulations which protect the railway to a mere nullity.

* * * * *

The second point raised by the defence is as to the meaning of the word railway—he says that as “ railway ” is not defined either in the General Clause Act or the Indian Mines Act, it must be taken to mean the railway line itself and that he has not extended his operations within 50 yards of the railway line without notice. On this it is sufficient to point out that rule 5 refers to any railway subject to the provisions of the Indian Railways Act, 1890. In that Act railway is defined to include all land within the fences or other boundary marks, so that is obviously the meaning to be attached to the word in the rule.”

* * * * *

The accused was fined Rs. 200 : in default, two months' simple imprisonment.

The case against the owner was withdrawn.

Arising out of a fatal accident at the Barakar Coal Company, Limited's Loyabad coal mine by which two persons were killed by a trolley and bucket falling down a shaft as described in section III of this report, the manager was proceeded against under rule 19 read with sections 22(1)(e) and 22(3)(e), for not having the top of the pit properly fenced. The judgment was as follows :—

The accused was summoned for breach of rule 19 under the Indian Mines Act—this rule is as follows :—Every side entrance to a mine from the surface and the top, and all entrances between the top and the bottom, including the sump (if any), of every working, ventilating or pumping shaft shall be properly fenced : but this shall not be taken to forbid the temporary removal of the fence for the purpose of repairs or other operations if proper precautions are used. The facts are not in dispute—an accident occurred at the colliery of which accused is manager. On the night of March 2nd, a trolley fell down a sinking pit and two men were killed and two were injured. The top of this pit was protected by doors which opened upwards—when open, the doors themselves frame a fence on two sides, but leave the other two sides unprotected. Now at the time of the accident, these doors were parallel with the tram lines on which the trolley ran. If the doors are at right angles to the line, they are an automatic carrier which will stop the trolley. If they are parallel the only sort of fence possible is a movable fence, for as the Chief Inspector of Mines admits, it is necessary to get the trolley right over the top of the pit, so such a fence must be moved when the time comes for the trolley to go over the pit.

Now it is obvious to anybody and it is admitted by Mr. Lascelles, a defence witness, that it is preferable to have the doors at right angles to the line. It is in evidence from the prosecution witness and from one defence witness corroborating the accused's statement that the arrangement was purely temporary—the trolley had only a few days before been introduced and it was apparently not possible to get the lines at right angles to the doors. The only question I have to decide is whether proper precautions were taken. Now Mr. Turnbull, the Junior Inspector of Mines, seems to me to base the prosecution case on the absence of a movable fence—whereas Mr. Simpson, the Chief Inspector of Mines, says that the arrangement of the doors was “ all right but its manner of application was wrong ”. The accused says (and he is supported by two witnesses) that the precaution he took was to order the man in charge of the doors not to let the trolley come near till the doors were closed. Mr. Lascelles is of opinion that this is safer than a movable fence ; a movable fence he says, must be light. If it is light, it is no adequate protection against a heavy trolley pushed by several coolies, but on the other hand it gives a false sense of security. This seems to me to be sound reasoning. There is nothing on the record to justify me in holding that the accused ought to have suspended all operations until the tram lines were brought to right angles with the doors. Till this was done, the accused appears to me to have taken reasonable precautions and I do not consider that section 14 of the Indian Mines Act would make it right to convict him for the negligence of the man in charge of the doors to whom proper instructions had been given.

Arising out of an accident at the New Birbhum Coal Company, Limited's Borrea coal mine, whereby a woman fell into water in an abandoned coal shaft

the manager was proceeded against under rule 19 read with section 22(3)(e) for not having the shaft properly fenced. He pleaded that the shaft had been fenced but that the villagers had broken it down. He was found guilty and was fined Rs. 50 : in default one month's simple imprisonment.

The owners (three) of the North Jharia Coal Syndicates' Dhansar coal mine were prosecuted under section 13(1), and rules 4 and 9, read with section 22(3)(e) for working the mine without a qualified manager, for not keeping a daily report book and for not keeping a plan of the mine. They were found guilty and fined Rs. 30 each : in default one week's simple imprisonment.

The owner of J. Boisogomoff and Company's Radhaballavpur coal mine was prosecuted under section 13(1) and rules 1, 4 and 7, read with section 22(3)(e), for working his mine without a qualified manager, for working his mine without a second outlet, for not keeping a daily report book and for not fencing disused galleries. He pleaded guilty and was fined Rs. 200 : in default two months' rigorous imprisonment.

Arising out of an accident by which a woman was killed by falling down an abandoned coal shaft, on the Searsole Raj Estate, the owner of the estate was proceeded against under rule 19 read with section 22(1)(e) and 22(3)(e), for not fencing the top of the shaft, and was fined Rs. 50 : in default simple imprisonment for one month.

The owners (four) of the Majhlitand Coal Company's Majhlitand coal mine were prosecuted under section 13(1) read with section 22(3)(e), for working the mine without a properly qualified manager. They pleaded guilty and were fined Rs. 7-8-0 each.

The owner of Charu Chandra Miṭra's Ranidih coal mine was prosecuted under section 13(1), read with section 22(3)(e), for working the mine without a qualified manager. He had been repeatedly warned. He was found guilty and fined Rs. 100.

The owner of Chatra Naik's Sakua mica mine was prosecuted under rules 1 and 4 of Notification No. 11793-103, dated the 30th December 1908, read with sections 22(2)(b) and 22(3)(e) for failing to submit an annual return and for not giving notice of the change of ownership of the mine. He pleaded guilty and was fined Rs. 20 : in default two months' rigorous imprisonment.

The owner of Bundhu Singh's Sabarabia mica mine was prosecuted under section 16 and rule 1 of Notification No. 11793-103, dated the 30th December 1908, read with sections 22(3)(e) and 22(2)(b) for not giving notice of the opening of the mine and for failing to submit an annual return. He pleaded guilty and was fined Rs. 20 : in default two months' rigorous imprisonment.

The managing owner of R. N. Bagchi and Bros.' Dobari coal mine was prosecuted under rule 1 of Notification No. 11793-103, dated 30th December 1908, and under rule 45 of Notification No. 2968-82, dated the 21st April 1906, read with sections 22(2)(c) and 22(3)(e) for submitting a false return of output and working a mine, having an output which required a manager holding a first class certificate, with a manager holding only a second class certificate. The first complaint was held to be time barred under section 24, but to the second he pleaded guilty and was fined Rs. 150. The manager was prosecuted under rule 45, as above, read with section 22(3)(e), for managing the mine, without being qualified to do so. He also pleaded guilty and was fined Rs. 75.

The owner and manager of the Royal Bengal Coal Company's Kusumkanali coal mine were prosecuted under rule 9, read with section 22(2)(b), for not keeping a plan showing the workings up to a date not more than six months previously. They pleaded guilty and were each fined Rs. 20 : in default ten days' simple imprisonment.

The owner, agent and manager of the Shergarh Coal Company, Limited's Burman Baraboni coal mine were prosecuted under rules 1, 7 and 19, read with section 22(3)(e), for not arranging for apparatus for raising persons at the second outlet of the mine, for not fencing unused galleries and for not properly fencing the top of a sinking shaft. The manager was found guilty and was fined Rs. 200. In the case of the owner and agent, the Magistrate was of opinion that inadequate funds were provided and that the accused were

equally liable with the manager. They were each fined Rs. 200: in default simple imprisonment for one month.

The owner and agent then appealed to the High Court on the grounds (1) that the manager having been fined, they also could not be held liable, and (2) that a corporate body cannot be convicted of a criminal offence. The following extracts from the High Court judgment are given :—

“The Shergarh Coal Company are the owners and Ramjidas is the agent of a coal mine in mouza Baraboni in the district of Burdwan.

* * * * *

Section 14 of Act VIII of 1901, however, distinctly states that the owner, agent and the manager of every mine shall be responsible that all operations carried on in connection therewith are conducted in accordance with the provisions and rules of this Act and that in the event of any contravention of such provisions the owner, agent and manager shall each be liable to be found guilty of an offence against this Act unless he proves that he had taken all reasonable means to prevent such contravention. There is no justification for the view that the punishment of the manager *ipso facto* absolves the owners and the agent from punishment for a contravention of rules 1, 7 and 19.

The next point is whether a corporate body such as a company can be found guilty and sentenced for an offence under the Act. Having regard to the definition of person in sections 3 and 4 of the General Clauses Act (Act X of 1897), it is clear that a company can be punished for an offence under the Mines Act, unless the conviction or sentence is repugnant to the subject or context of the Act. Here the very object of the Act seems to be that a corporate body, such as a company, should be liable for contravening its provisions and the conviction is therefore correct. But the sentence of imprisonment in default is one which cannot be enforced against the company and is repugnant to the context of the Act. This part of the sentence, therefore, must be set aside. A similar view was taken in the case of *Hawke versus Hilton and Company, Limited*, in 25 Times Law Reports, p. 474. In that case it was sought to convict the company under section 4, George IV; Chapter 60, section 41 as rogue and vagabond for keeping a lottery in contravention of the terms of the Lotteries Act and it was held by Darling and Jelf, JJ., that although the company was not a person for the purpose of punishment with imprisonment as rogue and vagabond under section 41 of the Lotteries Act, yet it could be punished under the first part of the same section by a fine of £50 for each offence. There are also other authorities in the English Courts for holding that a company is liable to fine. In the present case the sentence of imprisonment being set aside, the Magistrate must recover the fine by distress or other legal procedure.

* * * * *

The result is that the conviction and sentence against the agent Ramjidas will be maintained and that so far as the Shergarh Coal Company is concerned, the sentence will be altered into one of a fine of Rs. 200 only.”

The owners (three) of the Central Tentulia Coal Company's Central Tentulia coal mine were prosecuted under section 13(1) and rules 3 and 7, read with section 22 (3) (e), for working the mine without a qualified manager, for not supporting the roof and sides and for not fencing disused galleries. They pleaded guilty and were fined Rs. 100 each : in default fourteen days' simple imprisonment.

The manager of the Shergarh Coal Company, Limited's Burman Baraboni coal mine was prosecuted under rule 6, read with section 22 (3) (e), for omitting to keep boreholes in advance of the workings when approaching a place likely to contain a dangerous accumulation of water. He pleaded guilty and was fined Rs. 20 : in default simple imprisonment for two weeks.

The owner of the Panjab Bengal Coal Company's Barora coal mine was prosecuted under rule 12 read with section 22 (2) (b), for failing to submit a copy of the plan of his abandoned mine. He pleaded guilty and was fined Rs. 75 : in default fourteen days' simple imprisonment.

The following cases were instituted under rule 1 of Notification No. 11793-103, dated the 30th December 1908, read with section 22 (2) (b) for failing to submit an annual return on or before the 1st February :—

The owner of Jai Prokash Narayan Singh's Tikopara mica mine. Fined Rs. 10 : in default simple imprisonment for one day.

The owner (and manager) of Mithu Sonar's Nayasarai coal mine. Fined Rs. 5 : in default simple imprisonment for one week.

The owners of the Joogidih Colliery Company's Joogidih coal mine. Fined Rs. 20 each.

The owner and manager of the Tikait Sahib of Ganwan's Sallaya mica mine. Fined 8 annas each.

The owner and agent of D. C. Biswas & Company's Paira mica mine. Fined Rs. 50 : in default simple imprisonment for one month. (The agent absconded).

The owner of H. Ahmed Brother's Muraidih coal mine. (Absconded).

The agent of Roy, Dutt & Company's Kajora coal mine was prosecuted under rule 1 of Notification No. 11793-103, dated the 30th December 1908, read with section 22(2)(c) for submitting an inaccurate annual return. He was fined Rs. 100 : in default rigorous imprisonment for one month.

At the instance of the manager of the Barakar Coal Company, Limited's Kantapahari coal mine, a winding engine-man was prosecuted for a violation of rules 5 and 62, made under section 21, read with section 22 (3) (e). He, however, absconded.

The following prosecutions were instituted under the Indian Penal Code :—

Arising out of the fatal accident at the Barakar Coal Company, Limited's Loyabad coal mine, in connection with which a prosecution was taken under the Indian Mines Act against the manager, as detailed on page 14, the head banksman was prosecuted under section 287, as he ordered the trolley to be pushed over the top of the shaft when the doors were open. He, however, absconded.

Arising out of a fatal accident at the Equitable Coal Company, Limited's Hariladih coal mine, described on page 50 of the last report, the manager was prosecuted under section 304 (a) in that he caused the deaths of two persons by doing a rash and negligent act not amounting to homicide, and under section 287 in that he did, with machinery, an act so rashly and negligently as to endanger human life. The following extracts from the judgment are given :—

* * * * *

"Something gave way, it is not known exactly what and two of these men were killed. These men were sent down to the buntons under the general instructions of the accused. The accused admits this and says it was impossible to raise the pipes without doing so. The Officiating Chief Inspector of Mines gives it as his opinion that the method employed was highly dangerous, considering that a considerable length of pipe had to be guided up through the buntons and says that there would have been considerably less danger, if each section of the pipe had been raised separately. On the other hand Mr. Owen, a prosecution witness says that in his opinion considering the experience of the accused and the peculiarity of the operation there was no impropriety in having two men down the shaft. Mr. Owen and the Officiating Chief Inspector of Mines have about equal experience (though of a slightly different kind) in such matters, and it is difficult to say that the opinion of either is more expert than the others. Mr. Owen also says that he has known several cases in which pipes have been renewed under similar conditions and that this is the first accident that has come to his notice. He does not think there was any more

probability of danger in this case than in any other shaft work—and he also says that the degree of danger arises with the importance of the man in charge at the pit top.

I think it is clear from this that no charge under section 304-(a) will stand. It has been held that in that section death must be the direct result of the accused's rash and negligent act without the intervention of another's negligence.

The accused's act must be "the *causa causans*" and in this case it obviously was not.

Accused as charged section 287. It was argued (and as I think rightly) that the section is not applicable, this accident was not due to any defect in, or negligence in the use of machinery. It was suggested by the prosecution that as soon as the pipes were attached to the hauling machinery, they became part of the machinery. But this is a standard interpretation, entirely opposed to common sense and with no legal authority either.

For these reasons I direct that the accused be discharged section 253."

Three permits granted to managers of small mines, and one authorization to manage more than one mine, were cancelled during the year on account of mismanagement, disclosed by inspection.

Section V.—General Remarks.

HEALTH AND SANITATION.

The year passed without any very serious outbreak of cholera in the coal-fields of Bihar and Orissa. The disease, however, was not entirely absent. From the Jharia coalfield 167 cases and 64 deaths were reported, the deaths being spread over twenty-three collieries. From the Raniganj field 109 cases and 60 deaths were reported. Of these deaths twenty-eight took place at one group of mines, the remaining deaths being spread over ten other collieries. Small-pox was more than usually prevalent. Four hundred and three cases and 73 deaths being reported from Jharia collieries and 102 cases and 17 deaths from Raniganj collieries. There was also an outbreak of small-pox in the Jharia bazar towards the end of the year.

Outside these coalfields there were 21 cases and 12 deaths from cholera at a manganese mine in Nagpur district. Cases occurred also at the Katni limestone mines. There were outbreaks of small-pox at Mohpani and Chandametta collieries, and at manganese mines in Balaghat and Nagpur districts. Epidemic pneumonia was reported from manganese mines in Bhandara district, and from Shivrajpur manganese mine in Bombay. With the exception of the last, all the above are in the Central Provinces.

The Jharia Sanitation Committee held two meetings during the year and dealt with various matters. In November this Committee, which has done good work in the coalfield for several years, was dissolved and a Board of Health was formed under the Bengal Mining Settlements Act, 1912. The extent of the settlement is shown on plan D. The Board is constituted as follows:—Official Members (1) The Deputy Commissioner of Manbhum (Chairman), the Chief Inspector of Mines in India, the Sub-Divisional Officer of Dhanbad, and the Civil Surgeon of Manbhum. Non-official members, three persons nominated by owners of mines and one person nominated by rent, royalty and fine receivers. The non-official members were Messrs. R. G. M. Bathgate, H. M. Bull, Dr. F. T. Simpson and Mr. Monmatha Nath Ray. Three meetings were held.

The total rainfall in the Jharia coalfield was 44.33 inches; in the Giridih coalfield it was 42.55 inches; and in the Raniganj coalfield it was 46.06 inches. These figures for 1913 were 71.51, 61.85 and 78.39 inches, respectively.

SIBPUR COLLEGE MINING DEPARTMENT.

The Principal has reported that at the commencement of the sessions there were ten students, of whom three were studying in the fourth year. Of the

third-year men, four passed and obtained promotion to the fourth-year class. One failed and is repeating the third-year course. The three fourth-year candidates passed the Diploma examination. Employment was secured for them and they are now at work.

Sanction has been sought and obtained to the opening of a special three-year course, leading direct to the mining diploma examination. Admissions to this are made in January (a time of year that is more convenient to those from European schools), and students are able to obtain the diploma without going through the sub-overseer classes, though being taught with them and reaching an identical standard in mathematics, science, drawing and workshops, before taking up the special mining subjects in the last two years. Indian students can still join in June and pass through the sub-overseer classes, or take a transfer to the new three-year course in the following January.

The first year of this new three-year course is common to students taking mining and electrical and mechanical engineering, in neither of which professions is a sub-overseer certificate of any special value. It is hoped that the admission of Europeans and Indians to the mining class from other parts of India may be considerably facilitated by this change.

It should be recorded that, of seven passes in the second class mine managers' certificates examination held in March 1915 at Dhanbad, the first four were students or ex-students of this college. Hemanta Kumar Nag who stood first, was a student at the college at the time he appeared at the examination.

A special class for mine managers' certificates was opened in February, and attracted three students. This number should also be improved upon next year, provided the classes are continued.

An innovation was made this year in the admission of special students to study mine surveying at the college camp which was pitched at Bhaga. Ten such students were admitted, seven of whom had read in the engineer department of the Civil Engineering College, five having failed at the intermediate examination in Engineering of the Calcutta University, held at the end of the second-year class, while one had completed the third-year course of that department and one had failed at the B. E. examination. One of the others was a European and two were admitted from the mining districts. All these students have obtained suitable employment. It is expected that there will be a greater number seeking admission this year, as these classes could not be advertised sufficiently last year, on account of the intervention of the long vacation.

The students have been called upon this year to do analyses of coal, etc., for several firms and for the Howrah Municipality. This is due to the absence of certain analysts from Calcutta on account of the war. The students took a great interest in this work and several contracts were made on their results. Work of this kind, which entails a sense of responsibility, always proves of greater benefit than hours of instruction and it is hoped and expected, therefore, that such work will continue.

Mr. H. C. Read officiated as Professor of Mining during a portion of the year under review, *vice* Mr. Robertson who was granted furlough.

It should be mentioned that arrangements have been made to enable students to visit a colliery soon after joining the mining classes, so as to enable them to acquire the earliest possible idea of what mines are like and thus to study the subject with greater understanding and profit. The majority of the Bengali students have never seen a mine and in some cases have never seen a hill or a rock.

MINING EDUCATION IN THE BENGAL AND BIHAR COAL-FIELDS.

Two meetings of the Mining Educational Advisory Board were held during the year.

Lecturers for the session 1914-15 were appointed as follows:—

Jharia Centre—Mr. E. D. James, Sijua Centre—Mr. J. R. Harrison, Charanpur Centre—Mr. T. Gibson, Dishargarh Centre—Mr. W. R. Lascelles, Raniganj Centre—Mr. J. Wilson, B.Sc.

The lecturers for the session 1912-13 reported that there were 240 names on the register. This is one hundred and twenty less than in the previous year. The average number of attendances at the various centres was 15.48, in other words an average number of seventy-seven students received instruction each week.

The sessional examination was held simultaneously at the different centres on the 1st June 1914, the examiners being Messrs. G. C. Leach and H. C. Read. Twenty-six students presented themselves for examination, of whom 16 (7 Europeans and 9 Indians) were successful in passing. The highest marks were gained by Mr. B. Adamson, Babu Hrishikesh Ghosh being only one mark behind.

The examiners reported as follows:—

“ We have read the reports of previous examinations and we consider that on the whole there is some improvement in the quality of the work shown. The defects of former years are, however, still apparent, and there was evidence of a tendency to rely more on book knowledge than on practical observation. Throughout the papers there is a distinct lack of close study, which could be remedied in private by painstaking students. The sketching has undoubtedly suffered through the absence of diagrams, the provision of which was a feature of other years. In many papers a restricted education is painfully evident.”

In addition to the English lectures, Babu Hemanta Kumar Sen, an assistant in the Sibpur College, mining department, was appointed to deliver a course of lectures on elementary coal mining in Bengali at six selected centres.

Mining and Geological Institute of India.

The total membership of the Institute at the end of the year, including subscribers, was 291. Three general meetings were held during the year. In addition to the above meetings, branch meetings were held in the Raniganj and Jharia coalfields at which discussions took place. The Government prize for the best paper during the year was divided equally between Dr. A. W. G. Bleeker and Mr. T. S. Gibson for their respective papers on “Contributory Notes to the Economic Geology and the results of petroleum borings of the Minbu Oilfield” and “Proposals for shaft-bottom arrangements and methods of working in deep seams.” Of the three prizes of the value of Rs. 100 each, offered by the institute on the following subjects—

- (a) Laying out a pit-bottom for an Indian Colliery;
- (b) Housing and sanitation of mine labour in India and;
- (c) Application of the various systems of haulage to Indian mines,

papers dealing with the subject (a) have been received and the prize was awarded to Mr. R. H. Husband. Three prizes are again offered this year for the best paper on the last two subjects and on “Metalliferous Mining or Geology connected therewith.”

Association of Colliery Managers in India.

At the commencement of the year, an important body was brought into existence by the founding of an association, with the above title.

The Association consists of a president, two vice-presidents, councillors, an honorary treasurer, an honorary secretary and members. The membership at the end of the year was 162. Amongst the objects for which the Association is established, as copied from the memorandum of association, are—(a) protecting their interests, (b) watching the progress of legislation as affecting the profession of mining engineers, (c) communicating collective views of the profession when necessary, (d) for the better control of labour, (e) protecting individuals who, in the opinion of the council of the association, are worthy of such protection, and (f) to promote the science of mining, but not in any way to interfere with the sphere of usefulness of any other scientific institution, subject to the discretion of the council.

Mr. T. Walsh, the manager of Bhulanbarari colliery, was the first president.

BOARD OF EXAMINERS FOR COAL MINE MANAGERS' CERTIFICATES.

The two non-official members of the Board were the same as that of last year, *viz.*, Messrs. S. Heslop and R. J. Browne.

Mr. R. J. Browne's term of office expired on the 5th May 1914. He was re-elected for a further term of office with effect from that date.

During the year seven meetings were held. There were twenty-two applicants for first class Indian certificates of competency, in lieu of British certificates, and they were all granted certificates.

One first and two second class certificates of service were granted.

An examination for certificates of competency was held at Dhanbad in the East Indian Railway Institute on the 25th, 26th and 27th February 1914, at which forty-two candidates sat for first class certificates and sixty-two for second class certificates. Competency certificates were granted to eight first class, and seventeen second class, candidates.

Of seven candidates who failed to obtain first class certificates, but who were recommended by the examiners for the grant of second class certificates of competency, four already held such certificates. Second class certificates were accordingly granted to three of the above mentioned candidates.

The examiners were Messrs. G. F. Scott, Glen George and G. C. Leach (Official Examiner and Secretary).

MINING BOARDS IN BENGAL AND BIHAR.

The Bengal Mining Board held four meetings during the year when the following were considered :—

(1) Rules for the close supervision over colliery magazines with a view to prevent the theft of explosives from them ; (2) the necessity for the constitution of a Mines Board of Health under section 3, Bengal Act II of 1912, for the subdivision of Asansol ; and (3) the draft of proposed revised forms of annual returns for coal mines and mines other than coal.

The non-official members of the Board were Messrs. W. Graham and Glen George.

The Bihar and Orissa Mining Board held one meeting during the year 1914, when the following were considered (1) the draft rules under the Jharia Water-Supply Act, and (2) the revision of the forms for the submission of annual returns by mine owners under the Indian Mines Act, 1901.

The non-official members were Messrs. T. H. Ward and R. G. M. Bathgate.

OFFICIAL DUTIES IN 1914.

Mr. G. F. Adams was Chief Inspector of Mines in India. He was granted seven months' combined leave from the 13th April. Subsequently an extension of one month and eleven days was granted to him. During the above period of leave he was on deputation in England for five days, to visit salt mines, and for two weeks, in connection with an inquiry into mining education. He resumed charge of the office of Chief Inspector on the 6th December.

Mr. R. R. Simpson was Inspector of Mines, No. 1 Circle. From the 13th April to the 5th December, he officiated as Chief Inspector, and from the 5th October to the 5th December, he had charge of No. 1 Circle in addition to his duties as Officiating Chief Inspector.

Mr. G. C. Leach was Inspector of Mines, No. 2 Circle. From the 13th April 1914 until the end of the year he had charge of No. 3 Circle in addition to his own duties.

Mr. C. J. E. David was Inspector of Mines, No. 3 Circle. From the 13th April 1914 till the 4th October 1914, he had charge of No. 1 Circle. He was granted six months' combined leave from the 5th October.

Mr. J. J. Turnbull was Junior Inspector of Mines. He worked under the Inspectors as follows :—From the beginning of the year to the 12th April under the Inspector for No. 1 Circle, from the 13th April till the 4th October under the Inspector for Nos. 2 and 3 Circles, from the 5th October to the 9th December under the Inspector of No. 1 Circle and from the 10th December to the end of the year again under the Inspector for Nos. 2 and 3 Circles.

I have the honour to be,

SIR,

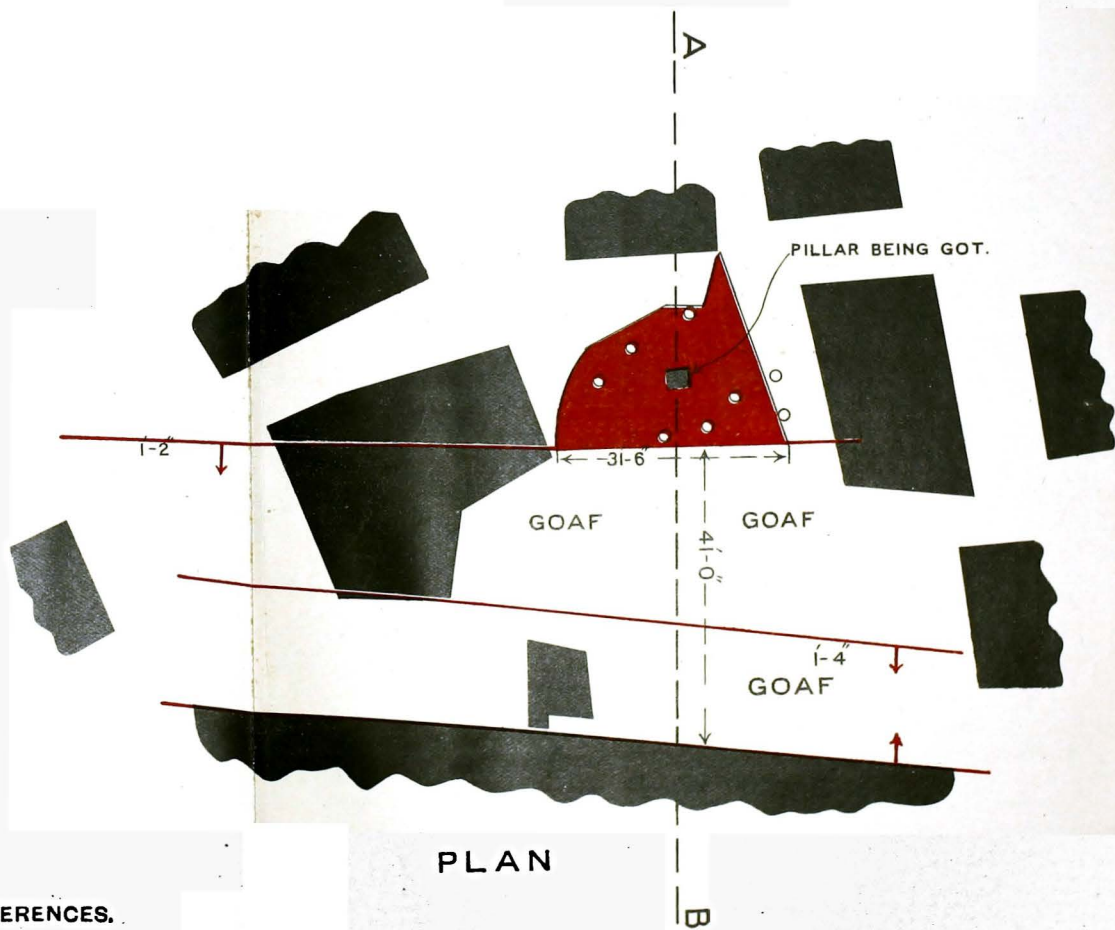
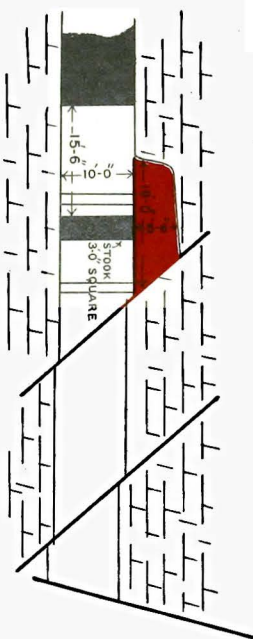
Your most obedient servant,

G. F. ADAMS,

Chief Inspector of Mines in India.




PLAN ILLUSTRATING REPORT ON
 FATAL ACCIDENT BY FALL OF ROOF
 AT
 THE BENGAL COAL Co., LTD'S, DHOBIDIH MINE
 Scale 1 Inch=20 Feet.

SECTION ON A.B.



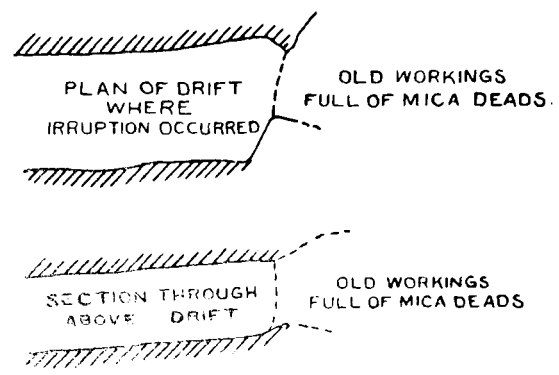
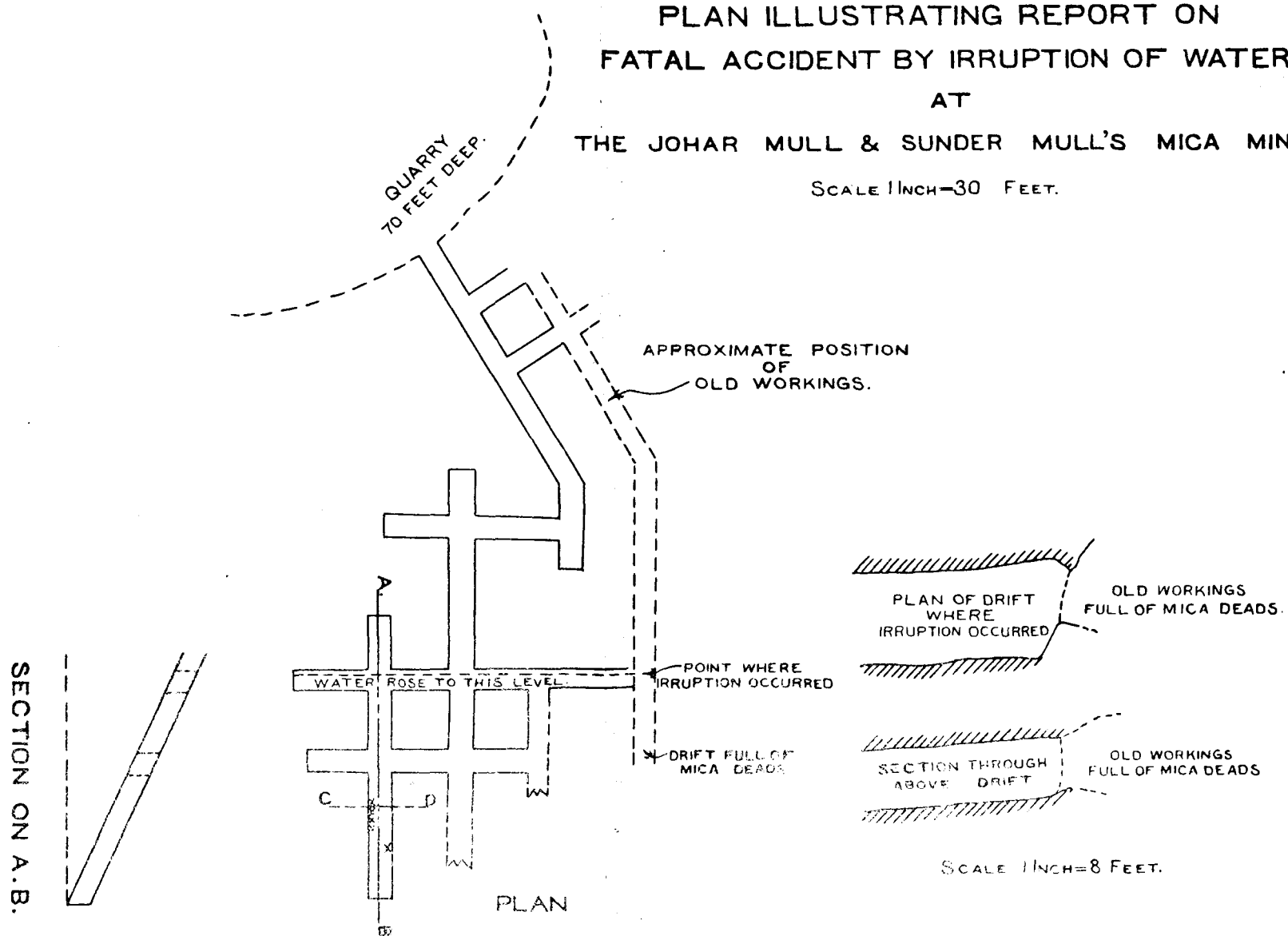
PLAN

REFERENCES.

- Timber props shown thus. 
- Fault shown thus. 
- Roof which fell shown thus. 

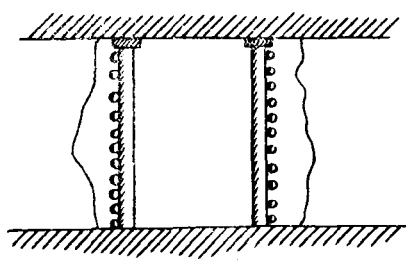
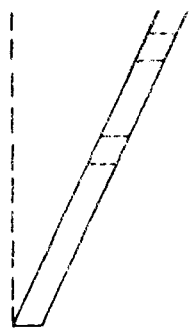
PLAN ILLUSTRATING REPORT ON
 FATAL ACCIDENT BY IRRUPTION OF WATER
 AT
 THE JOHAR MULL & SUNDER MULL'S MICA MINE

SCALE 1 INCH=30 FEET.



SCALE 1 INCH=8 FEET.

SECTION ON A.B.



SECTION ON C.D.
 SCALE 1 INCH=4 FEET.

REFERENCE

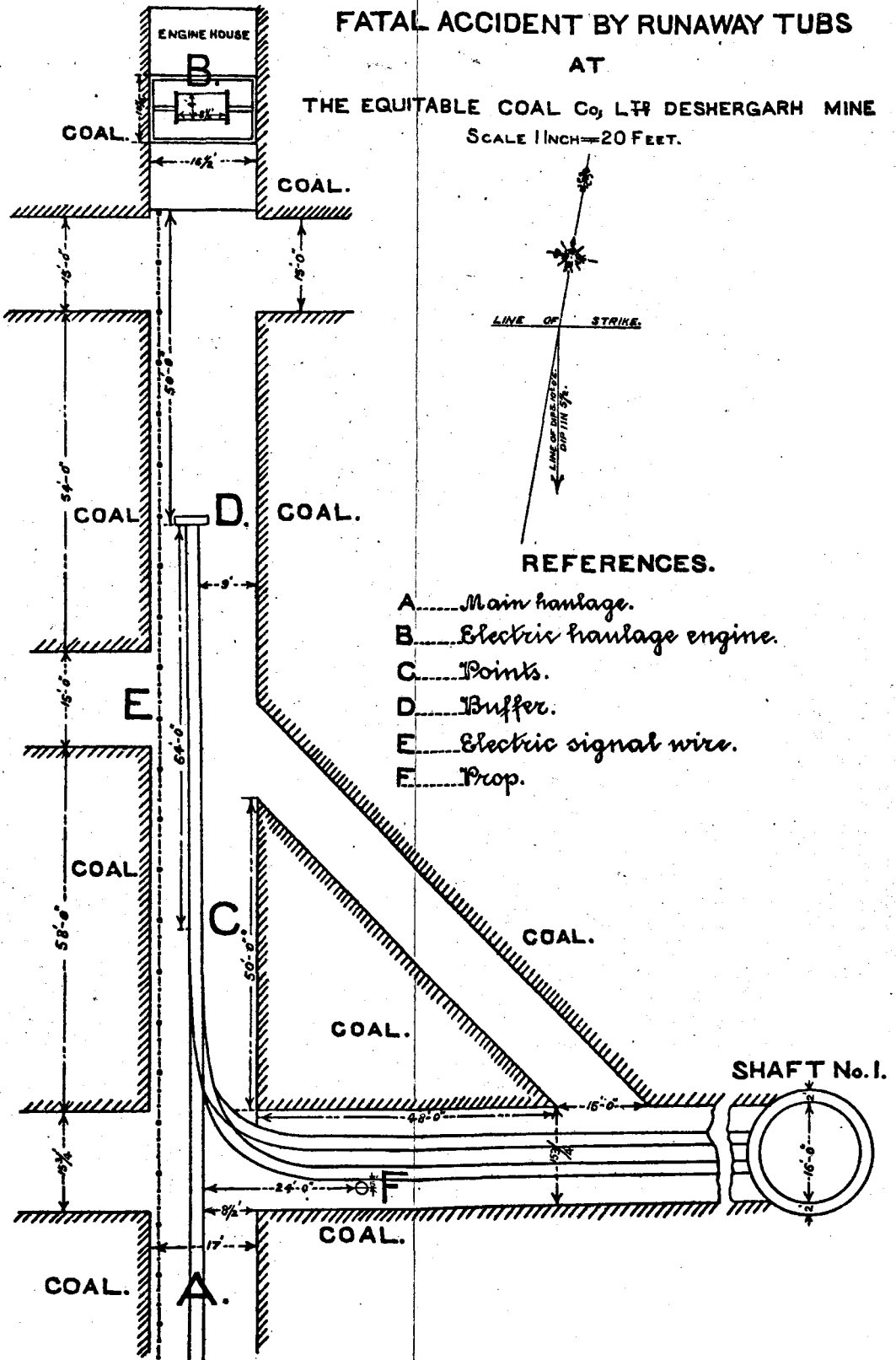
Position of Bodies shown thus.....X

PLAN ILLUSTRATING REPORT ON
FATAL ACCIDENT BY RUNAWAY TUBS

AT

THE EQUITABLE COAL CO, LTR DESHERGARH MINE

SCALE 1 INCH = 20 FEET.



REFERENCES.

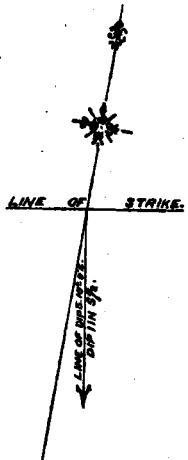
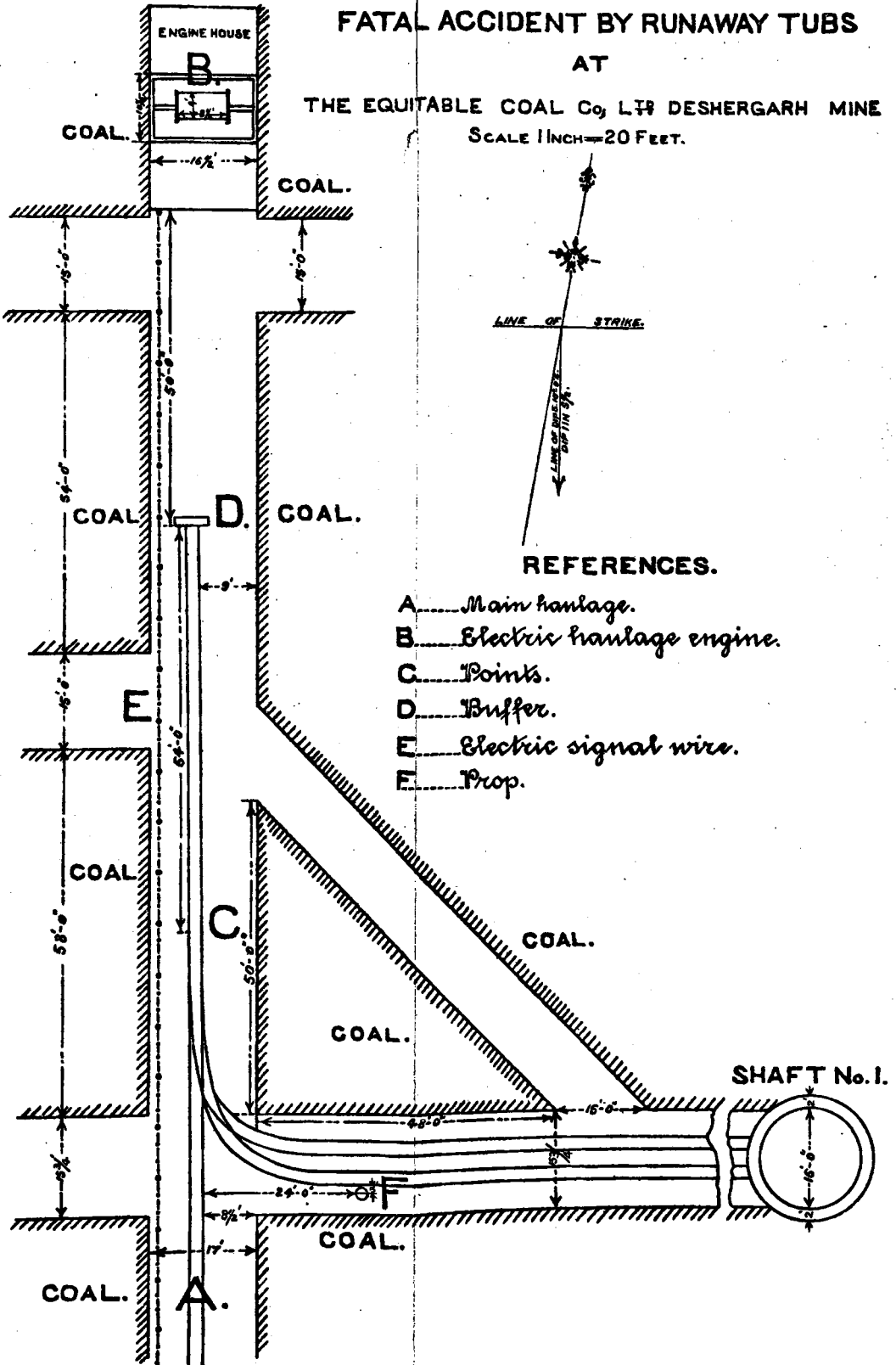
- A.....Main hantage.
- B.....Electric haulage engine.
- C.....Points.
- D.....Buffer.
- E.....Electric signal wire.
- F.....Prop.

PLAN ILLUSTRATING REPORT ON
FATAL ACCIDENT BY RUNAWAY TUBS

AT

THE EQUITABLE COAL CO, L^{TD} DESHERGARH MINE

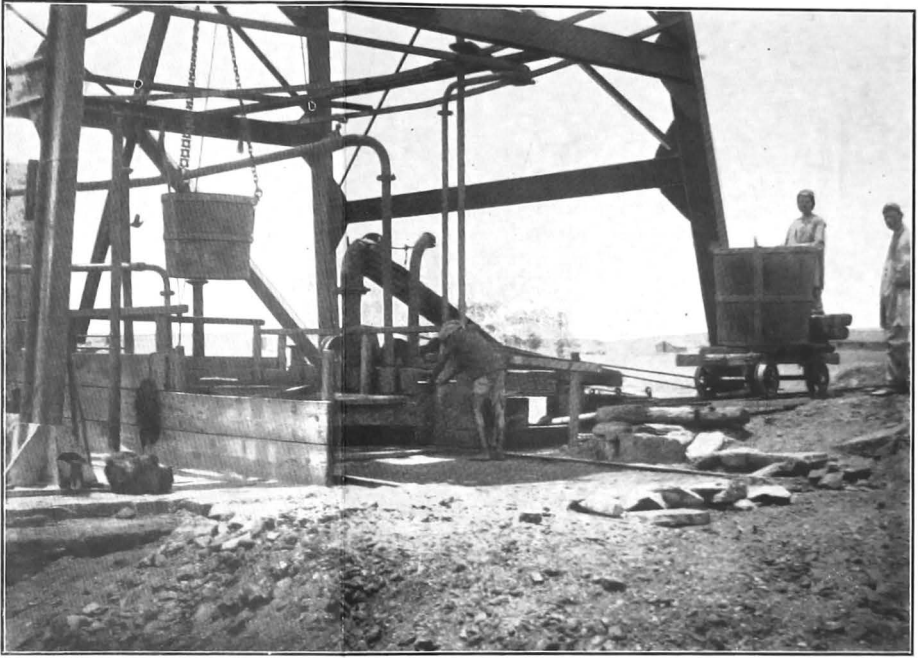
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REFERENCES.

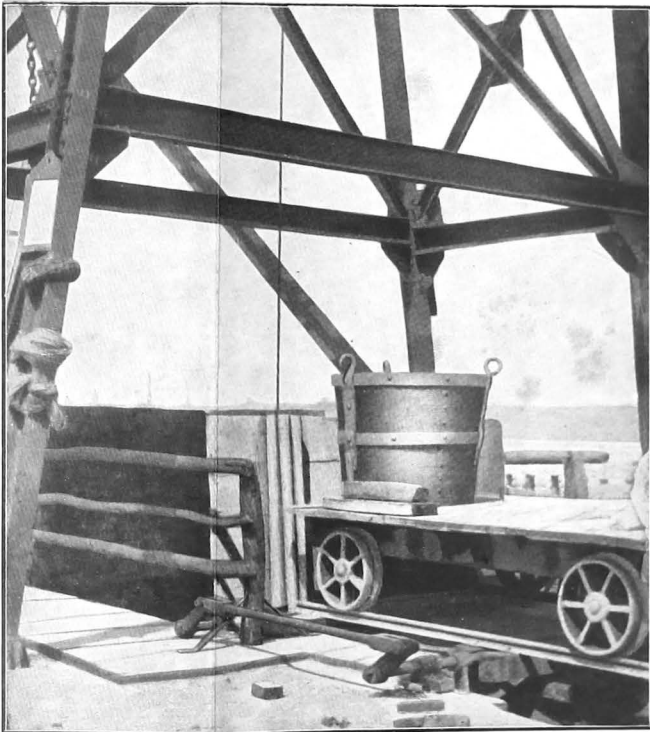
- A. Main haulage.
- B. Electric haulage engine.
- C. Points.
- D. Buffer.
- E. Electric signal wire.
- F. Prop.

PLATE A.



Trolley Covering Top of Sinking Shaft.

PLATE B.



Balanced Doors Covering Top of Sinking Shaft.

APPENDIX I
STATISTICS OF MINES AND MINERALS.

Table No. 1.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.								Grand total below and above ground.	
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		BELOW GROUND.				ABOVE GROUND.					
								Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.		
A.—COAL.																	
Bihar and Orissa.	Hazaribagh {	Bokaro-Rangarh	10	...	10	...	...	Tons. 7,900	57	69	9	135	28	48	4	75	210
		Giridih	9	5	4	8	22	825,026	3,741	1,480	...	5,221	1,980	1,300	78	3,358	3,679
	Manbhum {	Jharia	6	...	6	3	3	21,646	141	91	4	236	80	40	11	140	376
		Jharia	263	147	116	221	431	9,125,007	26,461	19,957	837	46,755	17,746	8,610	1,376	27,741	74,496
	Sonthal Parganas. {	Raniganj	83	9	74	36	50	519,371	2,315	1,179	6	3,500	1,151	630	51	1,832	5,332
		Raniganj	2	...	2	2	2	2,384	16	7	...	23	3	4	...	7	30
	Sambalpur, Hingir-Bampur	Rajmahal	2	...	2	2	5	7,150	50	24	...	74	42	17	2	61	135
		Palamau, Daltonganj	1	1	...	2	2	81,680	279	173	68	510	223	48	27	298	808
		1	1	...	...	...	60,883	329	138	...	467	201	40	4	248	715	
	TOTAL	377	163	214	274	515	10,651,047	33,389	23,118	414	56,921	21,457	10,760	1,553	33,730	90,681	
Bengal.	Bankura, Raniganj	Bankura, Raniganj	2	...	2	1	1	5,702	48	22	...	65	8	8	...	16	81
		Birbhum "	1	...	1	...	...	2,023	13	8	...	21	10	2	...	12	33
		Burdwan "	175	146	20	136	311	4,416,815	17,058	8,406	159	25,623	8,070	4,738	334	13,142	38,765
	TOTAL	178	146	32	137	312	4,424,540	17,114	8,436	159	25,709	8,088	4,746	334	13,170	38,879	

APPENDIX I—contd.

STATISTICS OF MINES AND MINERALS—contd.

Table No. 1—contd.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.								Grand total below and above ground.
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		BELOW GROUND.				ABOVE GROUND.				
								Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
Central Provinces	Ohhindwara, Pench Valley Narsinghpur, Mohpani Chanda, Ballarpur Yeotmal	7 1 2 1	5 1 2 ...	2 1	3 ... 2 ...	4 ... 4 ...	95,670 50,774 89,292 ...	587	280	22	889	246	76	29	351	1,240
								594	208	...	802	412	50	...	462	1,264
								530	...	...	530	172	5	1	178	708
								8	...	...	8	30	4	...	84	42
								1,719	488	22	2,229	360	135	30	1,025	3,254
Punjab	Jhelum Shahpur Mianwali	6 2 2	... ... ...	6 2 2	... ... ...	... ... ...	45,867	629	...	5	634	253	...	14	207	901
							6,879	46	...	46	55	...	...	55	101	
							1,557	88	...	5	93	56	6	4	66	159
							54,303	763	...	10	773	364	6	18	388	1,161
Assam	Lakhimpur Naga Hills	7 1	4 ...	3 1	7 ...	10 ...	303,890	1,619	250	...	1,869	544	220	45	800	2,678
							778	37	...	37	129	24	...	153	190	
							304,668	1,656	250	...	1,906	673	244	45	962	2,868

Baluchistan	Kalat	4	...	4	...	...	3,161	40	...	...	49	13	...	...	13	68
	Quetta-Pishin	9	...	9	...	...	6,206	78	...	...	78	89	...	...	89	117
	Sibi-Khost	11	5	6	...	...	39,557	507	...	...	507	266	...	19	285	702
	Loralai	1	...	1	...	...	310	20	...	...	20	10	...	...	10	30
	TOTAL	25	5	20	...	...	48,234	654	...	...	654	328	...	19	347	1,001
North-West Frontier Province.	Hazara	1	...	1	...	...	94	7	...	...	7	...	...	...	...	7
	GRAND TOTAL (COAL) FOR 1914.	610	326	284	423	845	15,727,631	55,302	32,292	605	88,198	31,770	15,883	1,999	49,652	137,651	
	" " OF PRE- CEDING YEAR.	602	314	288	234	432	15,486,318	52,687	31,657	484	84,828	30,647	15,586	1,981	48,214	133,042	
	DIFFERENCE	+8	+12	-4	+189	+413	+241,313	+2,615	+635	+121	+3,371	+1,123	+297	+18	+1,438	+4,609	
							B.—MICA.										
Bihar and Orissa							Cwts.										
	Monghyr	12	...	12	...	...	2,980	211	163	20	394	65	130	24	219	613
	Hazaribagh	452	6	446	34	36	24,116	3,200	1,820	420	5,410	1,414	1,200	702	8,323	8,705	
	Gayn	28	...	28	6	6	4,653	624	463	74	1,101	306	333	206	845	2,066	
	TOTAL	492	6	486	40	42	31,149	4,035	2,440	514	6,005	1,785	1,672	932	4,980	11,381	
Madras	Coimbatore	1	...	1	...	...	...	...	...	...	...	13	...	...	13	13
	Nellore	77	0	63	49	50	5,556	2,097	1,371	179	9,647	431	471	379	1,281	4,028*	
	Salom	4	...	4	...	...	822	70	...	...	70	88	120	41	258	328
	TOTAL	82	9	78	49	50	5,878	2,167	1,371	179	9,717	532	600	420	1,553	5,260	

* Including labour figures for Nellore Bamankite.

APPENDIX I—contd.

STATISTICS OF MINES AND MINERALS—contd.

Table No. 1—contd.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.								Grand total below and above ground.
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		BELOW GROUND.				ABOVE GROUND.				
								Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.	
B.—MICA—contd.																
Rajputana	Ajmer	3	...	3	...	...	873	88	20	...	108	51	23	...	74	182
	Merwara	5	...	5	4	4	289	86	10	...	96	37	17	...	54	150
	TOTAL	8	...	8	4	4	1,162	174	30	...	204	88	40	...	123	332
GRAND TOTAL (MICA) FOR 1914.		582	15	597	93	96	38,189	6,376	3,847	693	10,916	2,405	2,312	1,352	6,069	16,985
" " OF PRECEDING YEAR.		632	9	623	112	112	43,650	7,089	3,656	681	11,426	2,897	2,553	1,858	7,308	18,734
DIFFERENCE		-50	+6	-56	-19	-16	-5,461	-713	+191	+12	-510	-492	-241	-506	-1,339	-1,749
C.—MANGANESE.																
Central Provinces	Nagpur	21	2	19	15	16	153,816	1,233	1,050	10	2,203	522	345	29	896	3,189
	Bhandara	9	...	9	8	8	64,773	522	469	41	1,032	395	241	63	699	1,731
	Balaghat	16	...	16	4	5	204,105	2,161	1,889	110	4,109	278	182	22	482	4,601
	Chhindwara	2	1	1	2	2	87,114	543	515	11	3,069	59	6	1	66	1,135
	Jabalpur	1	...	1	...	...	...	6	11	...	-17	8	6	2	11	28
TOTAL	49	3	46	29	31	509,808	4,455	3,884	181	8,520	1,267	780	117	2,154	10,674	
Madras	Vizagapatam	5	1	4	...	...	20,375	786	554	22	1,362	230	138	31	390	1,761

Bombay	Panch Mahals	2	1	1	2	2	19,488	316	136	37	459	116	14	7	137	626
	GRAND TOTAL (MANGANESE) FOR 1914.	56	5	51	31	33	555,672	5,557	4,574	240	10,371	1,803	932	155	2,690	13,061
	" " OF PRECEDING YEAR.	60	5	55	12	16	637,391	6,433	4,748	177	11,356	1,478	935	191	2,004	13,960
	DIFFERENCE	-4	...	-4	+19	+17	-81,719	-876	-172	+63	-985	+135	-3	-36	+56	-899
					D.—LIMESTONE.											
					Tons.											
Central Provinces	Jabalpur, Katni	25	3	22	26	27	146,955	1,220	1,816	111	3,147	243	354	80	677	3,634*
Panjab	Hoshiarpur	1	...	1	...	...	450	20	...	..	20	40	...	..	40	60
	GRAND TOTAL (LIMESTONE) FOR 1914.	26	3	23	26	27	146,505	1,240	1,816	111	3,167	283	354	80	717	3,694
	" " OF PRECEDING YEAR.	25	3	22	22	25	71,259	678	1,149	55	2,082	255	373	35	663	2,745
	DIFFERENCE	+1	...	+1	+4	+2	+75,246	+362	+667	+56	+1,085	+28	-19	+45	+54	+1,139
					E.—SALT.											
					Tons.											
Panjab	Shahpur	1	...	1	...	...	4,830	16	13	3	32	...	..	...	...	32
	Jhelam	2	...	2	1	2	119,311	413	346	59	818	39	...	...	39	857
	Mianwali	1	...	1	...	...	10,877	59	...	14	73	...	...	...	...	73
	GRAND TOTAL (SALT) FOR 1914.	4	...	4	1	2	135,516	488	359	76	923	39	...	...	39	962
	" " OF PRECEDING YEAR.	4	...	4	1	6	136,540	455	358	70	883	49	...	...	49	932
	DIFFERENCE	...	...	...	...	-4	-3,022	+33	+1	+6	+40	-10	...	...	-10	+30

* Including labour figures for Jabalpur Fuller's earth.

APPENDIX I—contd.

STATISTICS OF MINES AND MINERALS—contd.

Table No. 1—contd.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.										
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		BELOW GROUND.				ABOVE GROUND.				Grand total below and above ground.		
Burma	Mogok	8	8	F.—GEMS.		857	857	872		872	1,720
	Mogok						(a) Rubies.	Carats.								192,503		
	Mogok						(b) Sapphires.	56,709										
	Mogok	(c) Spinels.	54,830															
	TOTAL	8	8	804,042	857	857	872	872	1,729	
	GRAND TOTAL (GEMS) FOR 1914.	8	8	...	...	...	804,042	857	...	...	857	872	...	...	872	1,729
	" " OF PRECEDING YEAR.	9	1	8	...	...	278,708	769	...	...	769	1,046	...	...	1,046	1,815
	DIFFERENCE	-1	+7	-8	...	...	+25,336	+88	...	...	+88	-174	...	...	-174	-80
Bihar and Orissa	Monghyr	4	...	4	...	...	Tons. 2,600	112	58	58	228	57	..	...	57	260
	Kangra	5	...	5	...	...	0.04	120	8	2	125	174	41	89	248	373
Panjab	Gurgaon	5	...	5	...	3	3	103	...	58	251	80	...	7	87	288		
	Gurdaspur	1	...	1	...	...	61	...	...	...	...	...	...	...	...	...

	TOTAL	11	...	11	3	3	9,830	313	3	60	376	204	41	40	285	661
	GRAND TOTAL (SLATS) FOR 1914.	15	...	15	3	3	12,430	425	58	118	599	261	41	40	342	941
	" " OF PRECEDING YEAR.	15	...	15	...	...	11,470	319	25	58	403	425	75	83	583	985
	DIFFERENCE	...	...	...	+3	+3	+960	+106	+31	+60	+197	-164	-34	-43	-341	-44
	H.—GOLD.															
Madras	Anantapur	3	3	...	...	...	Ozs. 19,873	606	...	...	606	1,013	250	169	1,432	2,038
	GRAND TOTAL (GOLD) FOR 1914.	3	3	...	...	...	19,873	606	...	...	606	1,013	250	169	1,432	2,038
	" " OF PRECEDING YEAR.	3	3	...	3	6	11,019	499	...	...	499	982	211	111	1,284	1,783
	DIFFERENCE	...	...	...	-3	-6	+8,854	+107	...	...	+107	+51	+39	+58	+148	+255
	I.—IRON.															
Billar and Orissa	Puri	1	1	...	...	...	Tons. 48	6	...	4	10	16	...	7	23	33
	Singhbhum	1	...	1	...	...	151,029	600	240	40	880	53	2	...	55	635
	TOTAL	2	1	1	...	...	151,077	606	240	44	890	69	2	7	78	668
Central Provinces	Jabalpur	1	...	1	...	...	1,126	12	74	12	98	1	2	2	5	103
	Chanda	1	...	1	...	...	15,397	34	32	2	63	27	21	1	49	117
	TOTAL	2	...	2	...	...	16,523	46	106	14	166	28	23	3	54	120
	GRAND TOTAL (IRON) FOR 1914.	4	1	3	...	...	167,600	652	346	58	1,058	97	25	10	132	1,188
	" " OF PRECEDING YEAR.	3	...	3	1	1	98,371	475	232	90	797	173	325	100	598	1,395
	DIFFERENCE	+1	+1	...	-1	-1	+69,229	+177	+114	-32	+259	-76	-300	-90	-466	-207

APPENDIX I—contd.

STATISTICS OF MINES AND MINERALS—contd.

Table No. 1—contd.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914—contd.

Provinces.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.								
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		BELOW GROUND.				ABOVE GROUND.				Grand total below and above ground.
								Adult males.	Adult females.	Children (under 12).	Total below ground.	Adult males.	Adult females.	Children (under 12).	Total above ground.	
Burma	Tavey	42	1	41	18	23	31,500	1,791	32	...	1,823	1,008	90	16	1,114	2,937
		Mergui	1	...	1	26	34	34	61	61	95*
	TOTAL	43	1	42	18	22	31,526	1,825	32	...	1,857	1,069	90	16	1,175	3,032
	GRAND TOTAL (WOLFRAM) FOR 1914.	43	1	42	18	22	31,526	1,825	32	...	1,857	1,069	90	16	1,175	3,032
	" " OF PRECEDING YEAR.	35	...	35	18	21	27,520	1,441	24	5	1,470	915	110	36	1,061	2,531
	DIFFERENCE	+8	+1	+7	...	+1	+4,006	+384	+8	-5	+387	+154	-20	-20	+114	+501
Madras	K.—MAGNESITE. Tons.															
	Salem	2	...	2	...	...	399	12	...	21	33	37	...	10	47	80
	TOTAL OF PRECEDING YEAR	4	...	4	1	1	14,036	326	375	249	950	120	...	9	129	1,079
	DIFFERENCE	-2	...	-2	-1	-1	-13,637	-314	-375	-228	-917	-83	...	+1	-32	-999

* Including labour figures for Mergui Tin.

		L.—CHROMITE.														
		Cwts.														
Baluchistan	Quetta-Fishin	1	1	...	...	...	2,960	7	...	...	7	3	...	...	3	10
	Zhob	9	...	9	...	...	57,160	32	...	...	32	28	...	...	28	60
GRAND TOTAL (CHROMITE) FOR 1914		10	1	9	...	...	60,120	39	...	...	39	31	...	...	31	70
TOTAL OF PRECEDING YEAR		10	...	10	...	...	68,280	6	...	...	6	64	...	...	64	70
DIFFERENCE . . . . .		...	+1	-1	...	...	-8,160	+33	...	...	+33	-33	...	...	-33	...
		M.—COPPER ORE.														
		Tons.														
Bihar and Orissa	Singhbhum	1	1	...	1	5	4,400	402	...	...	402	841	564	60	1,465	1,867
	TOTAL OF PRECEDING YEAR	1	1	...	1	5	3,689	408	...	...	408	580	183	65	807	1,215
DIFFERENCE . . . . .		...	...	...	...	...	+761	-6	...	...	-6	+281	+382	-5	+658	+652
		N.—FULLER'S EARTH.														
		Tons.														
Central Provinces	Jabalpur	1	...	1	1	1	109	...	...	...	...	...	...	...	...	...
	TOTAL OF PRECEDING YEAR	1	...	1	...	...	103	...	...	...	...	...	...	...	...	...
DIFFERENCE . . . . .		...	...	...	+1	+1	+6	...	...	...	...	...	...	...	...	...
		O.—CLAY.														
		Tons.														
Bihar and Orissa	Palamau	1	...	1	...	...	785	4	6	2	12	6	5	...	11	23
Central Provinces	Jabalpur	3	1	2	2	2	26,818	61	118	5	184	42	8	3	53	237
GRAND TOTAL (CLAY) FOR 1914		4	1	3	2	2	27,603	65	124	7	196	48	13	3	64	260
TOTAL OF PRECEDING YEAR		6	1	5	4	4	23,665	133	98	...	231	99	...	...	99	330
DIFFERENCE		-2	...	-2	-2	-2	+3,938	-68	+26	+7	-35	-51	+13	+3	-35	-70
		P.—GALENA.														
		Cwts.														
Central Provinces	Drug	1	...	1	...	...	65	12	45	...	57	10	25	...	85	92
	TOTAL OF PRECEDING YEAR	1	...	1	...	...	80	7	35	...	42	...	...	...	...	42
DIFFERENCE . . . . .		...	...	...	...	...	+85	+5	+10	...	+15	+10	+25	...	+85	+50

* Labour figures included with those for Jabalpur Limestone.

APPENDIX I—contd.

STATISTICS OF MINES AND MINERALS—contd.

Table No. 1—contd.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914—contd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.								
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		BELOW GROUND.				ABOVE GROUND.				Grand total below and above ground.
								Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.	
Central Provinces	Jabalpur	1	...	1	9,280	16	12	...	28	5	5		33
	TOTAL OF PRECEDING YEAR	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	DIFFERENCE	+1	...	+1	...	...	+9,280	+16	+12	...	+28	+5	...	...	+5	+33
Bihar and Orissa	Q.—BAUXITE. Cwts.						1	5	...	...	5	10	...	...	10	15
	Hazribagh	1	...	1	...	...								
Burma	Mergui	1	...	1	...	...	140	...	...	...	...	...	...	...	...	...
	Tavoy	4	2	2	1	1	768	...	...	...	...	120	...	...	120	120
	TOTAL	5	2	3	1	1	908	...	...	...	...	120	...	...	120	120
	R.—TIN. Cwts.						909	5	...	...	5	130	...	...	130	135
	GRAND TOTAL (Tin) FOR 1914.	6	2	4	1	1										
	" " OF PRECEDING YEAR.	6	1	5	2	2										
DIFFERENCE	...	+1	-1	-1	-1	-825	+1	...	...	+1	-8	...	...	-8	-7	

* Labour figures included with those for Mergui Wolfram.

		S.—STEAHITE.														
Central Provinces . . .	Jabalpur	3	...	3	1	1	Cwts. 6,880	43	16	...	59	11	13	9	33	93
Madras	Kurnool	1	...	1	...	...	4,207	24	51	...	75	15	16	...	31	108
GRAND TOTAL (STEAHITE) FOR 1914.		4	...	4	1	1	11,087	67	67	...	134	26	29	9	64	198
" " OF PRECED- ING YEAR.		4	...	4	...	...	24,120	117	152	...	269	23	24	...	47	316
DIFFERENCE . . . . .		...	...	...	+1	+1	-13,033	-50	-85	...	-135	+3	+5	+9	+17	-118
		T.—GRANITE.														
Burma	Amherst	2	2	...	1	1	Tons. 125,348	495	7	...	502	125	9	5	139	641
TOTAL OF PRECEDING YEAR .		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
DIFFERENCE		+2	+2	...	+1	+1	+125,348	+495	+7	...	+502	+125	+9	+5	+139	+641
		U.—CORUNDUM.														
Madras	Trichinopoly	1	...	1	...	...	Cwts. 478	9	17	...	26	9	14	17	40	66
TOTAL OF PRECEDING YEAR .		4	...	4	...	...	1,650	28	39	3	70	21	41	12	74	144
DIFFERENCE		-3	...	-3	...	...	-1,172	-19	-22	-3	-44	-12	-27	+5	-34	-78
		V.—SAMARSKITE.														
Madras	Nellore	1	...	1	...	...	Cwts. 43	...	...	...	...	...	...	...	...	...
TOTAL OF PRECEDING YEAR .		1	...	1	...	...	3	...	...	...	...	...	...	...	...	...
DIFFERENCE . . . . .		...	...	...	...	...	+40	...	...	...	...	...	...	...	...	...

* Labour figures included with those for Nellore Mine.

APPENDIX I—contd.

STATISTICS OF MINES AND MINERALS—contd.

Table No. 1—concl'd.

Number of mines regulated by the Indian Mines Act, 1901, number of workers and output of minerals, during the year 1914—concl'd.

PROVINCE.	District and mineral field.	Number of mines under the scope of the Act.	NUMBER OF MINES.		NUMBER OF MINES INSPECTED DURING THE YEAR.		TOTAL OUTPUT.	AVERAGE NUMBER OF PERSONS EMPLOYED DAILY IN AND ABOUT THE MINES.								Grand total below and above ground.	
			Worked by mechanical power.	Not worked by mechanical power.	Number of mines inspected.	Number of inspections.		Below ground.				Above ground.					
								Adult males.	Adult females.	Children (under 13).	Total below ground.	Adult males.	Adult females.	Children (under 13).	Total above ground.		
Bihar and Orissa	W.—TRIPPLITE.																
	Gaya	1	...	1	...	...	Cwts. 200	...	...	...	...	...	...	...		...
	TOTAL OF PRECEDING YEAR . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...		...
	DIFFERENCE	+1	...	+1	...	...	+200	...	...	...	...	...	...	...		...
Bihar and Orissa	X.—PITCHBLEND.																
	Gaya	1	...	1	1	1	lbs. 16	50	44	4	98	98†
	TOTAL OF PRECEDING YEAR . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...		...
	DIFFERENCE	+1	...	+1	+1	+1	+16	+50	+44	+4	+98	+98

GRAND TOTAL (ALL MINERALS) 1914.	1,387	389	1,018	603	1,040	Tons. 16,903,315 Cwts. 151,897 lbs. 16 Ounces. 19,873 Carats. 304,042	74,500	43,638	1,933	120,071	40,874	30,541	3,925	65,140	185,311
GRAND TOTAL OF PRECEDING YEAR.	1,426	338	1,088	411	631	Tons. 16,484,842 Cwts. 166,987 lbs. ... Ounces. 11,019 Carats. 278,706	72,074	42,546	1,872	116,492	39,872	20,415	4,461	64,768	181,860
DIFFERENCE	-39	+51	-70	+192	+409	Tons. +418,373 Cwts. -15,090 lbs. +16 Ounces. +8,854 Carats. +25,336	+2,426	+1,092	+61	+3,579	+802	+126	-556	+372	+3,051

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* Labour figures included with those for Pitchblende,
 † Labour figures include those for Tripilite.

APPENDIX I—contd.

Table No. 2.
Number of mines opened and closed during the year ending 31st
December 1914.

Province.	District.	Number of mines opened.	Number of mines closed.	
A.—COAL.				
BIHAR AND ORISSA	Hazaribagh {	Jharra	2	1
		Bokaro-Ramgarh	6	7
		Glridih	2
	Manbhurn {	Jharra	19	18
		Raniganj	11	9
	Sonthal Parganas {	Rajnahal	1	...
Raniganj	1	...		
TOTAL		40	37	
BENGAL	Burdwan-Raniganj	12	14	
	Bankura . . . . .	...	1
TOTAL		12	15	
BALUCHISTAN	Sibi-Khost	1	2	
	Quetta-Fishin	2	1	
	Kalat	1	...	
TOTAL		4	3	
CENTRAL PROVINCES	Chhindwara	1	...	
	Yeotmal	1	...	
TOTAL		2	...	
ASSAM	Naga Hills	1	...	
PANJAB	Mianwali	2	2	
TOTAL (COAL)		61	57	
B.—MICA.				
BIHAR AND ORISSA	Monghyr	4	4	
	Hazaribagh	138	257	
	Gaya	3	5	
TOTAL		145	266	

APPENDIX I—*contd.*Table No. 2—*contd.*

Number of mines opened and closed during the year ending 31st
December 1914—*contd.*

Province.	District.	Number of mines opened.	Number of mines closed.
MADRAS	Coimbatore . . . . .	...	1
	Nellore	23	43
	Salem	1	4
TOTAL		24	48
RAJPUTANA	Ajmer	1	...
	Merwara	1	...
TOTAL		2	...
TOTAL (MICA)		171	314
C.—MANGANESE.			
CENTRAL PROVINCES	Bhandara . . . . .	...	2
	Balaghat	2	6
	Nagpur . . . . .	...	11
TOTAL		2	19
MADRAS	Visagapatam . . . . .	...	5
TOTAL (MANGANESE)		2	24
D.—LIMESTONE.			
CENTRAL PROVINCES	Jabalpur	6	9
PANJAB	Hoshiarpur	1	1
TOTAL (LIMESTONE)		7	10
E.—CHROMITE.			
BALUCHISTAN	Zhob	4	...
F.—CLAY.			
CENTRAL PROVINCES	Jabalpur	1	...
G.—IRON.			
CENTRAL PROVINCES	Jabalpur . . . . .	...	1
H.—WOLFRAM.			
BURMA	Tavoy	4	11
I.—GEMS.			
BURMA	Mogok	1	1
J.—TIN.			
BURMA	Tavoy	1	2

APPENDIX I—*concl.*Table No. 2—*concl.*

Number of mines opened and closed during the year ending 31st
December 1914—*concl.*

Province.	District.	Number of mines opened.	Number of mines closed.
K.—STEATITE.			
CENTRAL PROVINCES	Jabalpur . . . . .	...	3
MADRAS	Kurnool . . . . .	...	1
TOTAL (STEATITE)		....	4
L.—SLATE.			
PANJAB	Gurgaon . . . . .	...	1
M.—GALENA.			
CENTRAL PROVINCES	Drug	1	1
N.—CORUNDUM.			
MADRAS	Trichinopoly . . . . .	...	1
O.—SAMARSKITE.			
MADRAS	Nellore	1	1
P.—PITCHBLENDE.			
BIHAR AND ORISSA	Gaya	1	...
Q.—TRIPLITE.			
BIHAR AND ORISSA	Gaya	1	...
R.—GRANITE.			
BUERMA	Amherst . . . . .	...	2
S.—BAUXITE.			
CENTRAL PROVINCES	Jabalpur . . . . .	...	1
GRAND TOTAL		266	431

APPENDIX I—*contd.*

Table No. 3.

The following table shows the fluctuations in the output of the principal minerals raised from mines classed under the Indian Mines Act, 1901. The other minerals raised are gems, slate, iron ore, magnesite, chromite, tin, steatite, fuller's earth, clay, galena, corundum, samarskite, bauxite, granite, triplite and pitchblende.

Year.	Coal.	Manganese.	Mica.	Limestone.	Salt.	Wolfram.	Gold.	Copper.
	Tons.	Tons.	Cwts.	Tons.	Tons.	Cwts.	Troy ozs.	Tons.
1905 . . .	7,770,471	204,194	25,548	93,170	94,078	...	93	2
1906 . . .	9,112,663	436,442	50,438	43,836	118,023	...	...	...
1907 . . .	10,526,468	642,082	44,919	73,222	101,703	...	4,017	...
1908 . . .	12,149,020	494,942	46,208	101,569	93,779	...	7,242	10
1909 . . .	11,294,227	357,205	32,011	56,502	126,987	144	5,615	7
1910 . . .	11,387,716	408,669	21,375	81,253	119,867	18	3,269	864
1911 . . .	12,048,726	441,426	31,686	92,602	124,603	8,394	8,277	2,079
1912 . . .	14,044,368	423,464	41,660	91,784	131,233	25,401	7,269	8,984
1913 . . .	15,486,318	637,391	43,650	71,259	188,540	27,520	11,019	3,639
1914 . . .	15,727,631	555,672	33,189	146,505	135,518	31,526	19,873	4,400

Table No. 4.

The following table shows the amount of coal raised, the average number of persons working daily and the death-rates during the years 1905 to 1914 in respect of coal mines under the Indian Mines Act, 1901 :—

Year.	Amount of coal raised.	Average number of persons working daily below and above ground.	Number of deaths below and above ground.	DEATH-RATES.	
				Per 1,000,000 tons raised.	Per 1,000 persons working daily below and above ground.
1905 . . .	7,770,471	79,506	58	7.46	.72
1906 . . .	9,112,663	90,159	80	8.73	.89
1907 . . .	10,526,468	102,689	89	8.45	.86
1908 . . .	12,149,020	120,107	164	13.40	1.36
1909 . . .	11,294,227	109,291	119	10.53	1.08
1910 . . .	11,387,716	105,285	160	14.05	1.52
1911 . . .	12,048,726	106,598	148	12.23	1.38
1912 . . .	14,044,368	121,392	167	11.17	1.29
1913 . . .	15,486,318	133,042	185	11.95	1.39
1914 . . .	15,727,631	137,851	145	9.22	1.05

APPENDIX I—*concl'd.*

Table No. 5.

Statement showing the output of coal, the number of persons employed and the number of tons of coal raised per person employed in and about the coal mines of the principal coal-producing countries of the world :—

YEAR.	Country.	Tons of coal raised.	Persons employed.	Tons raised per person employed.
1913	United Kingdom	287,411,869	1,127,890	254
1912	United States	477,204,635	722,662	660
"	Germany	251,768,300	718,073	350
"	Austria-Hungary	51,691,931	130,748*	395
"	France	39,755,949	202,865	196
"	Belgium	22,609,180	146,207	154
"	Nova Scotia	6,802,997	16,297	511
"	British Columbia	3,025,709	7,130	424
"	Australia	11,729,775	21,842*	537
"	Natal	2,468,811	9,409	262
"	Transvaal	4,242,723	9,261	458
"	Japan	19,329,447	152,429	126
"	New Zealand	2,177,615	4,328	503
1910	Russia	25,031,716	180,333	139
		1,176,260,057	3,446,564	341
1914	British India	15,727,631	137,351	114

* Number of persons employed at coal mines in Hungary and Tasmania not available.

APPENDIX II.
ACCIDENTS IN MINES.

Table No. 1.
List of Fatal Accidents in mines regulated by the Indian Mines Act, 1901, during the year 1914.

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.
EXPLOSIONS OF FIREDAMP—(1 death).						
1	9th January, 9 A.M.	Old West Ledo Valley Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Mandhari Bengali, (m.), 35, "Opening" man.	Coal	Deceased was engaged in firing dynamite shots in a "chamber" by means of a fuse and a lighted rag when an ignition of gas took place and he was burned so severely that he died six days afterwards. The rag had been lighted by the European assistant foreman who had opened his safety lamp for the purpose, and who claimed to have tested for gas before charging the shot holes. Inspection and inquiry made. See Report, page 5.
FALLS OF ROOF AND SIDE—(95 deaths).						
(a) Falls of Roof—(49 deaths).						
2	6th January, 4 A.M.	Chanah Mine, Chirkunda P. O., Bihar and Orissa.	Bengal Coal Co., Ltd.	Sonatan Bauri, (m.), 24, Mohinda Bauri, (m.), 27, , Miners.	Coal	A piece of roof coal, measuring 18' x 9' x 2' 6" thick, fell and killed the two deceased outright. They were engaged in getting it down at the time. The roof had two loose ends and one side was traversed by a "slip." The place was well timbered. Inspection and inquiry made.
3	27th January, 7 P.M.	Kendwadifi Mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Barka Manjhi, (m.), 16, Miner.	Coal	Deceased worked in a pillar cutting district and was returning to his working place after having emptied a basket of coal, when a mass of top coal, weighing about two tons, fell upon him from the roof, killing him on the spot. Inspection and inquiry made.
4	12th February, 8 A.M.	Ganzlatan Mine, Sijua P. O., Bihar and Orissa.	New Manbhum Coal Co., Ltd.	Murat Passi, (m.), 35, Miner.	Coal	Deceased was working in a dip gallery and it is presumed that hearing sounds indicating a weakness in the roof, he attempted to run out to safety. He was, however, killed instantly by a large mass of falling stone and coal measuring 35' x 7' x 1' 10". Inspection and inquiry made.
5	17th February, 2-30 P.M.	Budeadh Mine, Giridih P. O., Bihar and Orissa.	Budeadh Coal Co.	Hardayal Mallah, (m.), 45, Prepping mistri.	Coal	Deceased passed through a fence and entered some old workings when a piece of roof stone, measuring 6' x 5' x 2', fell from a "slip" and killed him on the spot. A man who went to the rescue was also struck by a small piece of stone and sustained a comminuted fracture of the right leg. Inspection and inquiry made.
6	19th February, 12-40 P.M.	Lower Tikak Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Dhaneewar Musohar, (m.), 40, Sirdar. Girao Lohar, (m.), 23, Coal shoveller.	Coal	Whilst the two deceased were at work in a "chamber", measuring 25' x 15', a mass of about sixty tons of coal fell without warning from converging "slips" in the roof and killed them on the spot. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
FALLS OF ROOF AND SIDES—(contd.)						
(a) Falls of Roof—contd.						
7	21st February, 2 P.M.	New Tetturia Mine, Katragarh P. O., Bihar and Orissa.	New Tetturia Coal Co., Ld.	Lakhu Bauri, (m.), 30, <i>Coal-cutter.</i>	Coal	Deceased, during the temporary absence of the sirdar, went behind a fence to rob top coal at the corner of a pillar. Whilst so doing, a mass of coal and stone, weighing about two tons, fell upon him from the roof. He died an hour and a half afterwards from injuries sustained. Inspection and inquiry made.
8	24th February, 1-30 P.M.	East Kurkend Mine, Kirkend P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Bhusan Manjhi, (m.), 45, <i>Coal-cutter.</i>	Coal	Deceased was working in the face of a dip gallery, which was about 6 feet in height and in which 6 inches of top coal formed part of the roof, when a large mass of stone and coal, measuring 8' x 5' x 3' thick, fell from the roof upon him and killed him instantly. Inspection and inquiry made.
9	21st April, 12 noon.	Fatka Mine, Nirshachati P. O., Bihar and Orissa.	Fatka Coal Co.	Gobinda Mahato, (m.), 18, <i>Coal-cutter.</i>	Coal	Deceased, during the temporary absence of the sirdar went behind a fence to gather coal. Whilst so doing a mass of coal and stone, weighing about two tons, fell upon him from the roof, from a height of 6' 6". He died two days later from injuries received. Inspection and inquiry made.
10	27th April, 8 P.M.	Jamadoba Mine, Jamadoba P. O., Bihar and Orissa.	Indian Collieries Syndicate, Ld.	Raghunath Gosain, (m.), 30, <i>Mine sirdar.</i>	Coal	Deceased, a mine sirdar, deliberately went through a fence into a goaf area from which the timber had been withdrawn two days before, to get some coal from a chowkidar left behind. He had thrown out about ten cwt. when the roof fell, over an area of 15' x 15' x 10' thick, killing him instantly. Inspection and inquiry made.
11	3rd June, 1 P.M.	Pahargora Mine, Samdih P. O., Bengal.	F. W. Heilgers and Bros.	Paru Manjhi, (m.), 32, <i>A liner.</i>	Coal	Deceased, during the temporary absence of the sirdar, began to cut roof coal. After having done so and whilst filling a tub, a ton of coal, in several pieces, fell upon him from the roof at a height of 13' 6". He died two hours afterwards from shock. Inspection and inquiry made.
12	6th June, 5 A.M.	Burra Dhemu Mine, Sitarampur P. O., Bengal.	Burra Dhemu Coal Co., Ld.	Sashi Bauri, (m.), 32, <i>Miner.</i>	Coal	Deceased went behind a fence to rob a pillar. Whilst so doing, a mass of roof stone, measuring 5' 6" x 2' 6" x 1' 0", fell upon him from a height of 4 feet. He was severely injured internally and died six and a half hours later. Inspection and inquiry made.
13	24th June, 5 P.M.	Dhobidih Mine, Giridih P. O., Bihar and Orissa.	Bengal Giridih Coal Co., Ld.	Siva Musohar, (m.), 23, Pirchand Barhi, (m.), 24, Lali Bai, (m.), 28, Sankar Rai, (m.), 16, <i>Coal-cutters.</i> Ranwa Ghatwarin, (f.), 30, Gandari Ghatwarin, (f.), 20, <i>Coal-carriers.</i>	Coal	Seventeen persons were engaged in reducing a thin pillar of coal in a seam 10 feet thick and in a goaf 68' x 70' from which all coal had been removed. When the pillar was about 3' square it suddenly collapsed. All the persons fled to a place of safety, but after the head of the gang had satisfied himself there was no "weighting," six of them decided to go back to get the fallen coal. Shortly afterwards 2,000 c. ft. of sandstone roof being 6" thick and weighing about 130 tons fell on them, killing them outright. Inspection and inquiry made. See Report, page 6.

14	25th June, 9-30 A.M.	Simlabahal Mine, Jharia P. O., Bihar and Orissa.	Dhalgora Coal Co., Ltd.	Basu Singh, (m.), 50, <i>Miner.</i>	Coal .	On the day previous to the accident deceased had gone into a fenced off gallery close to the loading line to rob some coal and had been turned out by the sirdar, on the following morning deceased instead of going where he was told, again went into the same gallery and started to cut coal when about three tons of coal fell from two "slips" in the roof at a height of 7 feet and killed him instantly. Inspection and inquiry made.
15	15th July 12 noon	South-East Baraboni Mine, Charanpur P. O., Bengal.	Maharaja M. C. Nandi	Keola Kol, (m.), 35, <i>Miner,</i> Sonia Kolin, (f.), 18, <i>Coal-carrier.</i>	Coal .	A piece of coal, lenticular in shape, measuring 18' long x 5' 6", in the extreme width 1' 8" thick, fell from a height of 16 ft. in a gallery and killed the two deceased outright. The coal came away from an exposed "fault" on one side and from a "cleat" on the other side. Inspection and inquiry made.
16	10th July, 8-30 P.M.	Sudhi Mine, Sitarampur P. O., Bengal.	Sudhi Coal Co., Ltd.	Goman Bauri, (m.), 25, Bisto Bauri, (m.), 30, <i>Miners.</i> Rakhal Bauri, (m.), 27, <i>Propping coolie.</i>	Coal .	A fall of roof coal and stone, measuring 62' x 40' x 9' 7" thick, fell from a height of 5 ft. in an old goaf which had been "weighting." The fall took place first from half the area and extinguished all the lights in the mine. In the confusion which followed the three deceased entered the goaf and were buried by the fall from the remaining half. Inspection and inquiry made.
17	20th July, 10-15 A.M.	Saltore Mine, Dihargarh P. O., Bihar and Orissa.	Saltore Coal Co., Ltd.	Hopna Manjhi, (m.), 30, <i>Miner.</i>	Coal .	Deceased and two companions were engaged in cutting down roof coal in a gallery, when the piece of coal on which they were working, measuring 18' x 1' 6" x 3' thick, fell from a height of 17' 6". The shock occasioned by the fall brought on an epileptic fit from which deceased never recovered consciousness. The coal was full of very pronounced "cleats" that ran parallel with the sides of the gallery. Inspection and inquiry made.
18	21st August, 10 A.M.	Panohgatoihin Mine, Sitarampur P. O., Bengal.	Lutohipur Coal Co., Ltd.	Dnan Turi, (m.), 35, <i>Coal-cutter.</i>	Coal .	Deceased and a companion were working in a gallery getting down roof coal. Deceased had been warned not to pass under the coal but, disregarding the warning, did so and was struck by a mass, measuring 8' x 3' x 1' 6" and weighing about 6 cwts., which fell from a height of 5' 6". He died within three hours from the injuries received. Inspection and inquiry made.
19	26th August, 10-30 A.M.	Tikak Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Gopal Uria, (m.), 24, <i>Coal shoveller.</i>	Coal .	Whilst six persons were at work in a "chamber," measuring 50' x 18' x 10' high, three tons of coal fell from a "slip" in the roof without warning. Deceased, who was shovelling coal at the time, was killed on the spot. Inspection and inquiry made.
20	30th August, morning.	Basudin Mine, Ajmer P. O., Rajputana.	Rajputana Mica and Mineral Co., Ltd.	Binja, (m.), 25, <i>Labourer.</i>	Mica .	Deceased went into a closed portion of the mine to get shade while crushing up his tobacco and was suffocated by a fall of earth.
21	0th September, 12 midnight.	Bhuggudih Mine, Jharia P. O., Bihar and Orissa.	Bengal-Nagpur Coal Co., Ltd.	Harku Mahato, (m.), 40, <i>Coal-cutter,</i> Nuni Mullik, (f.), 30, <i>Carrier.</i>	Coal .	The two deceased went through a fence to rob coal from a pillar which had been fenced off that morning because the roof was "weighting," when about eight cwts. fell from a "slip" in the overhanging coal. Harku was killed outright and Nuni died as she was being taken out of the mine. Inspection and inquiry made.
22	10th September, 5-30 A.M.	Tikak Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Birbahadur Chattri, (m.), 29, <i>Coal shoveller.</i>	Coal .	Whilst deceased was shovelling in a "chamber," measuring 55' x 25' x 18' high, about ten tons of coal and clay fell from the roof without warning. He sustained injuries from which he died shortly afterwards. Four other persons escaped. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
FALLS OF ROOF AND SIDES—(contd.)						
(a) Falls of Roof—contd.						
23	11th September, 3 A.M.	Nandi Mine, Nandi P. O., Bengal.	Adjai Coal Co., Ltd.	Hopna Manjhan, (f.), 32, Coal-carrier.	Coal.	Deceased was loading in a gallery, and whilst so doing a mass of roof stone, measuring 4' 9" x 8' 9" x 8" thick, and tapering to feather edges, fell upon her from a height of 14' 6", inflicting injuries which caused instant death. Inspection and inquiry made.
24	18th September, 2-30 P.M.	Bhulanbarari Mine, Jamadoba P. O., Bihar and Orissa.	Bhulanbarari Coal Co., Ltd.	Jagu Kol, (m.), 30, Miner.	Coal.	Whilst deceased was sitting down near the face of the gallery in which he worked, a fall of roof stone occurred. He sustained injuries from which he died two days later. The stone which fell was a round mass of impure iron stone 3 feet in diameter and 2' 6" thick. It had been imbedded partly in the roof, but mainly in the coal at the top of the seam. Inspection and inquiry made.
25	26th September, 3 P.M.	Jharia Khas Mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ltd.	Mongal Chamar, (m.), 35, Coal-cutter.	Coal.	Whilst deceased was assisting another miner to take down roof coal in a gallery 10 feet high, a mass of coal weighing about two tons fell away from "slips" in the roof. He was struck by the falling coal and killed on the spot. Inspection and inquiry made.
26	16th October, 1 A.M.	Central Kurkend Mine, Kusunda P. O., Bihar and Orissa.	Central Kurkend Coal Co., Ltd.	Gangia Kolin, (f.), 25, Coal-carrier.	Coal.	Deceased was employed in loading coal in a gallery when roof coal was being taken down. She was killed on the spot by the fall of a mass of "jhamms" (burnt coal) from the roof. The mass was wedge shaped and measured, 6' x 8' to 3' to 0' thick. It fell from between converging "slips", from a height of 10 feet. Inspection and inquiry made.
27	20th October, 8 A.M.	Sor Range Mine, Quitta P. O., Baluchistan.	S. Pherozeshaw.	Rozadin, (m.), 30, Miner.	Coal.	Deceased was killed by a fall of about a ton of shale which fell from the roof from a height of 2 feet on to him.
28	11th November, 12-30 P.M.	Jharia Khas Mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ltd.	Birbal Kumar, (m.), 35, Lachia Kumarin, (f.), 10, Coal-carriers.	Coal.	Whilst the two deceased were loading coal in the face of a gallery a mass of shale, measuring 6' x 3' 6" thick, fell from the roof at a "fault" from a height of 7 feet. Birbal died on the spot and Lachia sustained a compound fracture of the leg, and died some days later. Inspection and inquiry made.
29	19th November, 1 P.M.	Hatnol Mine, Dishargarh P. O., Bengal.	M. L. Laik and Bros.	Mohesh Bauri, (m.), 28, Jogindra Bauri, (m.), 23, Miners.	Coal.	The two deceased entered a gallery that they and all the officials of the mine knew to be dangerous, and started to cut roof coal without authority. A piece of coal, measuring 4' 6" x 4' 9" x 1' 6" thick, fell from a height of 8' 9" and killed them outright. A girl aged fourteen who was carrying coal for them was knocked over by a piece of rolling coal and was injured. Inspection and inquiry made.

80	24th November, 10-30 A.M.	Bhutgoria Mine, Jamadoba P. O., Bihar and Orissa.	Aldih Coal Co., Ltd.	Behari Mahato, (m.), 17, <i>Pump khalasi.</i>	Coal .	Deceased was cleaning out the suction pipe of a pump under his charge, whilst so engaged a thin slab of stone, measuring 2' x 1' x 2' thick, fell from the roof and fractured his leg. He died in hospital a month later. Inspection and inquiry made.
81	27th November, 5 P.M.	Ashakuti Mine, Katragarh P. O., Bihar and Orissa.	Parascole Coal Co., Ltd.	Thakur Manjhi, (m.), 20, <i>Coal-cutter.</i>	Coal .	Deceased, in the absence of the sirdar who had gone to another part of the mine, went through a fence to cut coal from a pillar. Whilst so engaged, a mass of coal and stone band, measuring 5' 6" x 3' 0" x 8" thick, fell upon him from a height of 6 feet and broke his back. He died one and a half hours afterwards. Inspection and inquiry made.
82	2nd December, 3 A.M.	Bhaga Mine, Jharis P. O., Bihar and Orissa.	Lodna Colliery Co., Ltd.	Sundar Bauri, (m.), 35, <i>Miner.</i>	Coal .	Deceased in the absence of the sirdar, broke down two fences, and went beyond them to rob a pillar. Whilst so engaged a mass of roof coal, weighing about 10 cwts., fell upon his head and killed him instantly. Inspection and inquiry made.
83	17th December, 12-30 P.M.	Chinchuria Mine, Asansol P. O., Bengal.	New Birbhum Coal Co., Ltd.	Dhobani Dhobi, (m.), 35, <i>Propping matri.</i>	Coal .	Against the explicit orders of his superiors and in their absence deceased passed under a fence to sound the roof of a goaf. Whilst so doing, a mass of coal, measuring 20' x 10' x 2' 6" and weighing about 10 tons, fell from a height of 10 feet upon him. He was killed instantly. Inspection and inquiry made.
84	17th December, 1-30 P.M.	East Ledo Valley Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Jhuri Ahir, (m.), 34, <i>"Opening" man.</i>	Coal .	Whilst deceased was standing at the entrance to a "chamber" he was killed by the fall from the roof of about a ton of coal. Inspection and inquiry made.
85	21st December, 6-30 A.M.	Nodiha Mine, Dishargarh P. O., Bihar and Orissa.	Nodiha Coal Co., Ltd.	Ati Mullick, (f.), 26, <i>Kamin.</i>	Coal .	Deceased was working in a gallery of a pillar-cutting district when a large area of roof stone fell in the goaf. The vibration consequent upon this caused a stone, measuring 5' x 4' x 6" thick, to fall upon her from the roof from a height of 8 feet. She was killed instantly. Inspection and inquiry made.
86	25th December, 4-30 A.M.	Dandot Mine, Choa Saidan Shah P. O., Panjab.	Thakur and Ramji Dass	Monlu, (m.), 28, <i>Miner.</i>	Coal .	Deceased was cutting coal which was very loose when a slab of roof shale, 5' long x 3' 6" wide and of unknown thickness, gave way at the end next to the coal which it crushed beneath it. There was a bag full of coal lying between two of a row of chocks. This bag barred his gress and the slab caught him between the line of chocks and the coal face and killed him.
(b) Falls of side—(47 deaths).						
87	3rd January, 12-10 A.M.	Bhowra Mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ltd.	Sukar Bhuia, (m.), 18, <i>Coal-cutter.</i>	Coal .	Deceased was struck by the fall of about two tons of coal from the corner of a pillar on a travelling road passing through an area of split pillars. He died on the way to hospital. The travelling road was fenced. Inspection and inquiry made.
88	22nd January, 2-30 P.M.	Kachidhana Mine, Sansar P. O., Central Provinces.	Indian Manganese Co., Ltd.	Torsi Mehra, (f.), 50, <i>Ore carrying coolie.</i>	Manganese .	Deceased with another woman went to gather some ore lying below a piece of ground, on which work had been stopped by the manning of a fortnight before. About one and a half tons of earth fell covering deceased entirely and breaking her neck. The other woman was partially buried but was uninjured. Inspection and inquiry made.
89	23rd January, 8-30 P.M.	Tikak Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Sampat Koiri, (m.), 28, <i>Coal shoveller.</i>	Coal .	Deceased whilst loading in a "chamber", measuring 63' x 25' x 0' to 18' high, was injured by the fall of about a ton of coal from the side of the "chamber" from a height of 12 feet. The head sirdar was present and had tested the sides. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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 minerals worked.	Cause of accident and remarks.
FALLS OF ROOF AND SIDES—contd.						
<i>(b) Falls of side—contd.</i>						
40	3rd February, 2 A.M.	Bhuggutdih Mine, Jharia P. O., Bihar and Orissa.	Bengal-Nagpur Coal Co., Ld.	Chowa Meah, (m.), 30, <i>Coal-cutter.</i>	Coal . . .	Deceased went behind a fence to rob the side of a pillar and whilst doing so, a mass of coal, weighing about one and a half tons, fell on him killing him instantly. Inspection and inquiry made.
41	4th February, 11-30 A.M.	Môkô Mine, Tavoy P. O., Lower Burma.	Moung Ni Toe . . .	Maung Shwe Yoe, (m.), 53, Mah Kya Yin, (f.), 20, <i>Coolies.</i>	Wolfram . . .	As the two deceased, who were father and daughter, were working in an open cutting 4' 6" high by 5' wide, a portion of the side of the cutting collapsed and buried them. Maung Shwe Yoe was killed instantly and Mah Kya Yin died as soon as liberated.
42	9th February, 7 A.M.	Lariatand Mine, Hazaribagh P. O., Bihar and Orissa.	Bihakuari . . .	Mussamat Sukri Bhuiani, (f.), 24, Mussamat Murti Bhuiani, (f.), 24, <i>Labourers.</i>	Mica . . .	The two deceased together with a girl of seventeen years of age entered an abandoned-mica mine to get some felspar for whitewashing their buts. A collapse of earth occurred and the deceased were totally buried and when dug out were dead. The girl sustained minor injuries. Prosecution against owner initiated. <i>See Report, page 13.</i>
43	13th February, 3 P.M.	Sudriandih Mine, Nowagarh P. O., Bihar and Orissa.	Sudriandih Coal Co., Ld.	Giridhari Roy, (m.), 35, <i>Coal-cutter.</i> Jogna Roy, (f.), 30, Lakri Roy, (f.), 24, <i>Coal-carriers.</i>	Coal . . .	Whilst miners were at work on a pillar in a "broken" district, a mass of under-cut coal, measuring 17' long × 4' to 10' high × 1' 3" to 4' thick, fell from the side of the opposite pillar killing the three deceased on the spot. Inspection and inquiry made.
44	26th February, 4 A.M.	Bagdiggi Mine, Jharia P. O., Bihar and Orissa.	C. J. Smith . . .	Phucha Manjhi, (m.), 30, <i>Coal-cutter.</i>	Coal . . .	Deceased was set to cut floor coal by the overman and night-shift airer. During their absence he began to undercut the side of a pillar about 30 ft. away from his appointed working place. Whilst so doing a mass of coal, weighing about one and a half tons fell. A piece weighing about 1 cwt. fell upon his head and killed him instantly. Inspection and inquiry made.
45	10th March, 1 P.M.	Jharia Khas Mine, Jharia P. O., Bihar and Orissa.	Standard Coal Co., Ld.	Etwari Turi, (m.), 26, <i>Coal-cutter.</i>	Coal . . .	Deceased was loading coal at the base of a pillar and whilst so doing, a mass of coal, measuring 8' × 4' × 2' thick, together with several smaller lumps, fell from a height of 7' 11". Deceased was struck by some of the smaller falling coal and rendered unconscious, and was found half an hour later with his nose and mouth buried in dust coal. Death was caused by suffocation. Inspection and inquiry made.
40	12th March, 2 P.M.	Bansdeopur Mine, Kusanda P. O., Bihar and Orissa.	Bansdeopur Coal Co.	Karu Manjhi, (m.), 22, <i>Coal-cutter.</i> Budhni Manjhan, (f.), 20, <i>Carrier.</i>	Coal	The two deceased went down the pit on a Puja day, unknown to the management, who had made no arrangement for the colliery to be worked. They went behind a fence to rob a pillar and whilst undercutting a corner of it, a large mass of coal, weighing between eight to ten tons, fell upon them.

47	30th March, 6-15 A.M.	Bansdeopur Mine, Kusunda P. O., Bihar and Orissa.	Bansdeopur Coal Co.	Doyal Gope, (m.), 28, <i>Coal-cutter.</i>	Coal	Deceased had gone behind a fence to rob the corner of a pillar and while so doing, a mass of coal, weighing about 10 tons, fell. He was struck by several small pieces of coal which fell from a height of about 20 feet. He was killed instantly. Inspection and inquiry made.
48	11th April, 6 P.M.	Bhuggutdih Mine, Jharua P. O., Bihar and Orissa.	Bengal-Nagpur Coal Co., Ld.	Bepot Meah, (m.), 50, <i>Coal-cutter.</i>	Coal	Deceased went through a fence and began to rob coal from the corner of a pillar, when the corner came away from two "slips" and about five tons, fell on him. He was standing on a barrel and was knocked down inside it being killed instantly. Inspection and inquiry made.
40	12th April, 5-20 A.M.	Nimeha Mine, Searsal P. O., Bengal.	Baraboni Coal Concern, Ld.	Sri Ram Mullick, (m.), 23, <i>Coal-cutter.</i>	Coal	Four persons were cutting coal from the side of a pillar in a fenced area when a block of coal, measuring 49' x 5' 10' x 8' high, fell from a height of 7 feet and killed deceased outright and seriously injured two others. Inspection and inquiry made.
50	18th April, 11-30 A.M.	Balaghat Mine, Dongri P. O., Central Provinces.	Central Provinces Pros- pecting Syndicate, Ld.	Anantram Marar, (m.), 25, <i>Rock worker.</i>	Manganese	A slab of rock, measuring 10' x 4' x 1' 6" thick, slid off a joint plane near the top of the excavation and fell on deceased at a point about 20 feet lower down, killing him instantly.
51	20th April 5 P. M.	Hermyingyi Mine, Tavoy P. O., Burma.	Hermyingyi Mining Co., Ld.	Po Tun, (m.), 25, <i>Labourer.</i>	Wolfram	Deceased after kicking down some of the reef near the surface of an excavation 20 ft. deep sat down in the bottom of the excavation to rest in the shade. Whilst sitting there some of the ground which his work had probably loosened fell on him causing injuries from which he died on his way to hospital.
52	11th June, 1 A.M.	East Kurkend Mine, Kurkend P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Bhupan Meah, (m.), 30, <i>Miner.</i>	Coal	Whilst a pillar of coal was being split in a pillar cutting district a piece of coal, 2' 6" x 2' 6" x 1' 3", after being side cut by deceased, came away suddenly from a hidden "slip" and fell on his left thigh. He walked out of the pit, but died the following day from peritonitis, caused by the blow. Inspection and inquiry made.
53	18th June, 10-30 P.M.	Barari Mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Mohinda Rai, (m.), 30, <i>Miner.</i>	Coal	Deceased broke down a fence and began to rob coal from a pillar corner, when about ten tons fell and caught him, causing injuries from which he died some five hours later. Inspection and inquiry made.
54	18th June, 11-30 A.M.	Khurhurbari Mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Khubi Dosadh, (m.), 35, <i>Jig brakeman.</i>	Coal	A piece of coal, measuring 6' x 7' 0" x 1' 6" thick fell from the overhanging side of a gallery and killed deceased outright. He was probably sitting down talking to his brother who was, it is surmised, getting down the coal at the time. The miners who were working at this place and who were related to the deceased were doing so against orders. A sirdar was dismissed and the company refused to pay the usual compensation to the deceased relatives. Inspection and inquiry made.
55	18th July, 9 P.M.	Lower Tikak Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Moubir Mongor, (m.), 25, <i>Coal loader.</i>	Coal	Whilst deceased was loading coal in a "chamber" a lump of loose coal, weighing about one ton, rolled down from the rise side and killed him on the spot. The dip is 1 in 3. The sirdar heard the coal moving and shouted a warning, but deceased failed to get out of the way. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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 miner worked.	Cause of accident and remarks.
FALLS OF ROOF AND SIDES—contd.						
(b) Falls of Side—contd.						
56	24th July, 7 A.M.	West Ledo Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Ganga Gere, (m.), 28, Coal shoveller.	Coal	In the process of forming a "chamber" the pillars surrounding it became crushed. Whilst the sirdars were examining the "chamber" and the workmen were sitting down some distance back, a mass of about a ton of coal fell from the side of the tram road and killed deceased on the spot. The road was 5' 6" wide and 6' high. Inspection and inquiry made.
57	5th August, 10-15 P.M.	New Suratand Mine, Jharia P. O., Bihar and Orissa.	J. L. Banerjee & Co.	Bhadu Mullick, (m.), 36, Coal-cutter.	Coal	Deceased went through a fence and started cutting the side of a pillar when a piece of coal, measuring 10' x 3' 0" x 2' thick, fell from a "slip" and broke his right ankle. He died from shock thirty-six hours later. Inspection and inquiry made.
58	11th August, 2 P.M.	Dandot Mine, Dandot P. O., Panjab.	Ishar Dass	Akbar, (m.), 30, Propman.	Coal	Deceased was withdrawing timber when a piece of the side of the gallery fell upon him. The case at first was not thought serious, but the patient died about six weeks afterwards, probably, from internal injuries.
59	28th August, 3 P.M.	Kurkend Mine, Kurkend P. O., Bihar and Orissa.	Kurkend Coal Co.	Churnah Mahato, (m.), 25, Miner.	Coal	Deceased was engaged in getting down overhanging coal from a pillar in a pillar cutting area when about two tons fell. He was struck on the head and sustained injuries from which he died within the hour. Inspection and inquiry made.
60	31st August, 11 A.M.	West Ledo Valley Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Chuni, (m.), 34, "Opening" man. Chandra Bhabdur Lama, (m.), 26, Sirdar.	Coal	During a temporary stoppage of work the two deceased were sitting down at the entrance to a "chamber" 33' x 24' x 20' high, when a mass of coal, weighing about one and-a-half tons fell from the side and killed them on the spot. Inspection and inquiry made.
61	11th September, 11-45 A.M.	North Kustore Mine, Kusunda P. O., Bihar and Orissa.	Kusunda and Nayadi Collieries, Ltd.	Nisau Harin, (f.), 13, Sarada Harin, (f.), 14, Coal-carriers.	Coal	As the two deceased were carrying out coal to load a tub, about three tons of side coal fell without warning, killing them instantly. The cohesion of the mass that fell had been destroyed by the roof coal being out a few days previously, and support should have been afforded. Inspection and inquiry made.
62	8th October, 1 A.M.	East Kurkend Mine, Kurkend P. O., Bihar and Orissa.	Marine Coal Co., Ltd.	Badal Kol, (m.), 42, Miner.	Coal	Deceased went into an unfenced gallery of a pillaring district to bring down some top coal. Whilst so doing, a piece of coal, two cubic feet in size, and weighing about one and a half cwts. fell upon his head and killed him instantly. Inspection and inquiry made.
63	8th October, 4 P.M.	Jamadoba Mine, Jamadoba P. O., Bihar and Orissa.	Indian Collieries Syndi- cate, Ltd.	Saida Bilaspuri, (m.), 35, Coal-cutter.	Coal	Deceased and a companion were told to out floor coal in a gallery in a pillar cutting district. During the absence of the sirdar deceased went behind a fence to rob the side of a pillar. Whilst so doing, a mass of coal, measuring 4' 6" x 2' 4" x 8" thick and weighing about 2 cwts. fell upon him and broke his spine, an injury from which he died four hours later. Inspection and inquiry made.

64	18th October, 6-30 A.M.	Barari Mine, Jamunoba P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Kashi Korin, (f.), 30, Coal-carrier.	Coal	Deceased was employed in loading small coal, and contrary to orders, entered a gallery fenced off on account of loose and dangerous sides. Whilst there, she was knocked down and killed on the spot by the fall of about a ton of coal from the side. Inspection and inquiry made.
65	15th October, 10-30 A.M.	Bansdeopur Mine, Kusanda P. O., Bihar and Orissa.	Bansdeopur Coal Co.	Bismi Bhuiani, (f.), 13, Carrier.	Coal	Deceased was loading coal in a gallery of a pillar cutting district. Whilst so engaged, a mass of coal, measuring 10' x 8' x 2' thick, fell from a side of an adjacent pillar. A warning was shouted by the sirdars in charge but deceased, instead of running out of the gallery, ran into the falling coal. Her body was recovered ten minutes later, but life was then extinct. Inspection and inquiry made.
66	17th October, 12 noon.	Thingandon Mine, Tavoy P. O., Burma.	Tavoy Concessions, Ld.	Thee Yin, (m.), 16, Coolie.	Wolfram	Deceased was working with two other coolies in a small open cutting on a reef, when about a ton of stones and earth fell on him from the side and from a height of about 10 feet and killed him.
67	24th October, 4 P.M.	Hermyingyi Mine, Tavoy P. O., Burma.	Hermyingyi Mining Co., Ld.	Shwo Tha, (m.), 27, Miner.	Wolfram	Deceased was working on a reef in an open cutting, sitting down and using a crowbar. About a ton of earth fell from the surface 19 feet above him and buried him. When dug out he was found to be dead.
68	30th October, 10 P.M.	Titilmuri Mine, Sijua P. O., Bihar and Orissa.	Titilmuri Collieries, Ld.	Sama Bhuia, (m.), 28, Miner.	Coal	Deceased left his appointed working place, during the absence of the sirdar, to cut floor coal in an adjacent gallery. Whilst so engaged, a mass of coal, weighing approximately three tons, fell from off the pillar side. He was killed on the spot. Inspection and inquiry made.
69	21st November, 2-30 P.M.	Phularibnd Mine, Jharia P. O., Bihar and Orissa.	Khas Jharia Coal Co.	Bhattu Bhuin, (m.), 35, Coal-cutter.	Coal	Deceased passed through a fence into discontinued workings and began to rob coal from the corner of a pillar. Whilst so engaged about one and a half tons of coal fell upon him from the side at a height of 10 feet. He died an hour later. Inspection and inquiry made.
70	30th November, 11 A.M.	Hermyingyi Mine, Tavoy P. O., Burma.	Hermyingyi Mining Co., Ld.	Ah Chong, (m.), 27, Miner.	Wolfram	Deceased was working on a reef in an open out when about two tons of earth and stone fell upon him from a height of about 8 feet, killing him instantly.
71	11th December, 11 P.M.	Aldih Mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ld.	Patan Singh, (m.), 12, Coal-filler.	Coal	Deceased was filling coal in a gallery. Whilst so doing, a piece of side coal, lying between two "alips," and weighing about 70 lbs, fell upon him from a height of about 5 feet. Deceased complained only of a pain in his chest and was able to proceed home, but died thirteen hours later from shock. Inspection and inquiry made.
72	17th December, 2 P.M.	Borjan Mine, Behubor P. O., Assam.	Nazira Coal Co., Ld.	Kadir Dhat Mekrani, (m.), 28, Coal-cutter.	Coal	Whilst deceased was at work in a level 6 feet high by 6 feet wide a mass of stone, measuring 3' x 1' 6" x 8" thick, fell from the side on him. He was pinned down with his face on the floor and when extricated, ten minutes later, he was dead. Inspection and inquiry made.
73	19th December, 6-40 A.M.	Khost Mine Khost P. O., Baluchistan.	North-Western Railway	Jiwan, (m.), 15, Carpenter's coolie.	Coal	Deceased was sitting or lying on the goaf in the coal face which was secured by a line of props, backed by corrugated sheets. One prop broke suddenly and the prop, a sheet, and about one and a half cwt. of coal fell upon him, killing him instantly.
74	24th December, 4-30 P.M.	Kalonta Mine, Tavoy P. O., Burma.	Tavoy Concessions, Ld.	Dhaman Thapa, (m.), 22, Coolie.	Wolfram	About three tons of earth fell from the side of an open out on to deceased. There were no visible injuries and his death was probably due to internal injuries. The fall was due to the heavy rain which fell the night previous.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
FALLS OF ROOF AND SIDES—concl'd.						
(b) Falls of side—concl'd.						
75	80th December, 12-45 P.M.	Charanpur Mine, Charanpur P. O., Bengal.	Reliance Coal Co., Ltd.	Somi Kolin, (f.), 13, Loader.	Coal.	Deceased was loading coal when a piece of coal, measuring 4' 6" x 9" x 2' thick, fell from a height of 5 feet, from a break formed in the course of working and killed him instantly. It is possible that a miner working close by accelerated the fall and the pillars were being extracted in an irregular manner. Inspection and inquiry made.
76	31st December, 4-30 P.M.	Sodepur Mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ltd.	Dhanraj Rajwar, (m.), 40, Miner.	Coal.	Deceased holed, against orders, to a glassy face in the vicinity of a "fault" and brought down upon himself a triangular piece of coal, measuring 13' 9" x 4' 6" x 8' high. He was killed outright. Inspection and inquiry made.
IN SHAFTS—(22 deaths).						
Overwinding—(3 deaths).						
77	8th August, 0-10 A.M.	Charanpur Mine, Charanpur P. O., Bengal.	Reliance Coal Co., Ltd.	Dewan Khan, (m.), 36, Onsetter. Kadu Roy, (m.), 30, Assistant Onsetter.	Coal.	Just after an undisclosed overwind had taken place about midnight the two deceased entered the cage which was standing at the surface. They were lowered a few feet when the rope became detached from the capel and the cage dropped a distance of 251 feet to the shaft bottom. The overwind had caused the rings of the capel to be loosened. They were killed instantly. Inspection and inquiry made.
78	30th November, 11-30 A.M.	Rakha Hills Mine, Rakha Mines P. O., Bihar and Orissa.	Cape Copper Co., Ltd.	Parosa, (m.), 35, Underground coolie.	Copper.	A winding engineman, having received a signal to lower the skip down a shaft, raised it instead up into the sheaves. The bridle nuts were sheared and the skip ran wild down the skipway, killing deceased, who was working in the sink, at a depth of 145 feet. Three other persons were injured. Inspection and inquiry made. See Report, page 7.
Ascending or descending by machinery—(4 deaths).						
79	29th June, 7-30 A.M.	Toposi Mine, Toposi P. O., Bengal.	Bansra Coal Co., Ltd.	Rakhal Karmakar, (m.), 37, Fitter mistri.	Coal.	Deceased with four other men, was descending a shaft when a guide rope broke, and this caused the cage to tilt at one end. Deceased fell out of the cage to the bottom of the shaft about 100 feet below and was killed instantly. Inspection and inquiry made.
80	5th July, 5 P.M.	Pahargora Mine, Samdih P. O., Bengal.	F. W. Heilgers and Brothers.	Mahindi Muchi, (m.), 22, Fireman.	Coal.	Deceased and three other men were being wound up a pumping shaft in a bucket by means of a steam winch. When within 3 feet of the surface, three coils of the winding rope slipped off the drum and the bucket dropped back in the shaft for a distance of about from 10 to 13 feet. Deceased was flung out of the bucket and fell to the bottom of the shaft and was killed. His body was recovered two days later. Inspection and inquiry made.
81	9th August, 4 A.M.	Kendwadih Mine, Kusunda P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Rambakash Kurmi, (m.), 30, Trolleyman.	Coal.	Deceased while being raised in a shaft 108 feet deep fell out of the cage to the shaft bottom and was killed. It was alleged that he fainted from the effects of smoking Ganja. The cage was not fitted with gates or safety bars or even with the usual hand-rail. Inspection and inquiry made.

82	16th September, 6 A.M.	Rakha Hills Mine, Rakha Mines P. O., Bihar and Orissa.	Cape Copper Co., Ltd.	Raghanath, (m.), 39, <i>Underground mistri.</i>	Copper	On the arrival of the skip at the top of a shaft, deceased was discovered in the skip. He was quite dead and had sustained severe injuries. It is probable that he put his head out of the skip as it was taking the curve where the shaft passes from the vertical to the underlay. He had been riding in the skip against explicit orders. Inspection and inquiry made.
Falling into shaft from the surface—(2 deaths).						
83	14th February, 4.30 P.M.	Mayo Mine, Chanda P. O., Central Provinces.	Mullah Hasanally Nathu- boy.	Szdnshu Kunbi, (m.), 40, <i>Sinker.</i>	Coal	As deceased was being hoisted out of a shaft in a shallow iron bucket he let go the rope when he had reached a distance of about 3 feet from the pit top. He fell to the bottom of the shaft a distance of about 60 feet and was killed. Inspection and inquiry made.
84	1st March, 9 P.M.	North Singaran Mine, Toposi P. O., Bengal.	Upper India Coal Co.	Kunti Baurin, (f.), 50, <i>Rassi kamin.</i>	Coal	Deceased who was employed as a rope puller at a sinking pit which was 50 feet deep, fell down the pit at night while work was stopped for the evening meal. She died in a few minutes. The front of the pit was unfenced. Inspection and inquiry made. Prosecution initiated against manager. <i>See Report, page 13.</i>
Falling from part of the way down—(3 deaths).						
85	14th February, 3 P.M.	Sodepur 9 and 10 pits Mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ltd.	Teku Menh, (m.), 38, <i>Stone cutting sirdar.</i>	Coal	While a cage was at rest at a landing, situated 400 feet from the surface in a shaft 912 feet deep, and after some pumpmen had left the cage and entered the landing, deceased who was a stone-cutting sirdar and who had remained behind in the cage apparently lifted the fence bar and attempted to enter the landing. He missed his footing and fell to the bottom of the shaft being killed instantly. Inspection and inquiry made.
86	27th March, 10 A.M.	Jibutil Mine, Morriston P. O., Madras.	Jibutil (Anantapur) Gold Mines, Ltd.	Vaniyambadi Manuswami, (m.), 30, <i>Contractor's coolie.</i>	Gold	As deceased, who had been working in a sink was climbing out of it on a ladder, he fell from the ladder, a distance of about 20 feet and was killed.
87	3rd June, 6 P.M.	Bankaimulla Mine, Charanpur P. O., Bengal.	Bengal Coal Co., Ltd.	Ganpatia Mahato, (m.), 35, <i>Gallery driver.</i>	Coal	Deceased had been working with another miner in a gallery near a landing in a shaft, which was 100 feet up from the shaft bottom. Whilst his companion continued working he went towards the shaft to get into the cage. He evidently made a mistake as to which cage was at rest at the landing and falling down the shaft was killed. The shaft was properly fitted with signals, landing boards and fences. Inspection and inquiry made.
Things falling from the surface—(4 deaths).						
88	2nd March, 4 A.M.	Loyabad Mine, Bansjora P. O., Bihar and Orissa.	Parakar Coal Co., Ltd.	Kangu Kahar, (m.), 50, Durjan Gope, (m.), 18, <i>Sinkers.</i>	Coal	The top of a sinking pit, 60 feet deep was fitted with two sinking doors. The trolley was laid along the line of these doors instead of across it. The banksman shouted to the trolleyman to push the trolley over the pit, apparently forgetting that the doors were open. The trolley and bucket consequently fell down the pit and killed the two deceased. Two other men were injured. There were fifteen men in the shaft. Inspection and inquiry made and prosecution initiated against the manager. <i>See Report, pages 8 and 14.</i>
89	2nd August, 12-15 P.M.	Jamuria Mine, Nandi P. O., Bengal.	Equitable Coal Co., Ltd.	Chhedhi Singh, (m.), 24, <i>Timbering coolie.</i>	Coal	Deceased had been helping to load timber into a cage at the bottom of a shaft 187 feet deep. Whilst a loaded cage was being drawn to the surface one of the props struck the buntion supporting the "keps" and fell down the shaft. Deceased was standing outside the bottom protection boards, drinking from a stream of water which falls in the shaft, when the prop fell upon his head and killed him instantly. Inspection and inquiry made.
90	18th October, 3 A.M.	Alkusa and Kiska Mine, Kusunda P. O., Bihar and Orissa.	Kanga & Co.	Etwarri Dosadh, (m.), 35, <i>Onsetter.</i>	Coal	The deceased, an onsetter, had loaded a cage and was placing the check bar in position when a piece of coal, about a 4½" cube in size, fell from the cage at the surface upon his head, causing a fracture of the skull, an injury from which he died two and a half hours later. Inspection and inquiry made.

APPENDIX II—*contd.*

Fatal Accidents, 1914—*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.
IN SHAFTS—<i>concl'd.</i>						
Things falling from part of the way down—(2 deaths).						
91	7th November, 9.30 A.M.	Butaria Mine, Pench P. O., Central Provinces.	H. V. Low & Co.	Buksu Jaswa, (m.), 40, <i>Miner.</i>	Coal	Deceased was working at the bottom of a shaft 46 feet deep when a piece of clay, weighing about 30 lbs., fell from a clay bed 3 feet thick, which was situated 6 feet from the surface and struck him with such force that he died from his injuries an hour later. Inspection and inquiry made and prosecution initiated against manager.
92	7th December, 6 A.M.	Raghnathbati Mine, Sitarampur P. O., Bengal.	Sudhi Coal Co., Ltd.	Burra Abdal Shoik, (m.), 30, <i>Fitter's coolie.</i>	Coal	Deceased and a companion were ascending a shaft in an open bucket when a piece of stone fell from the lip of a gallery of an intermediate seam into the bucket and fractured deceased's neck and skull. He died twelve hours later. Inspection and inquiry made.
Miscellaneous—(4 deaths).						
93	5th January, 10 A.M.	Simlabahal Mine, Jharia P. O., Bihar and Orissa.	Bhalgora Coal Co., Ltd.	Jamahir Singh, (m.), 23, Dhanukdhari Singh, (m.), 50, <i>Sinkers.</i>	Coal	The two deceased were standing on a pump scaffold in a sinking shaft at a depth of 200 feet. The scaffold, pump and three ranges of pipes, weighing about 8 tons and 3 cwt., were suspended in the shaft by a rope attached directly to the barrel of a single purchase crab winch geared at 24 to 1. While eight men were exerting power at the handle, the winch, the driving axle and both handles broke. The scaffold, etc., fell to the bottom of the shaft 60 feet below. Jamahir was killed on the spot and Dhanukdhari died from his injuries a few days later. Inspection and inquiry made. <i>See Report, page 8.</i>
94	22nd July, 7.30 A.M.	Bhagaband Mine, Jharia P. O., Bihar and Orissa.	Borrea Coal Co., Ltd.	Parmeshwar Singh, (m.), 25, <i>Onsetter.</i>	Coal	Deceased was an onsetter and was found dead under the cage. It is not known how he came to be there. Inspection and inquiry made.
95	9th October, 10.45 A.M.	North Anantapur Mine, Morrison P. O., Madras.	North Anantapur Gold Mines, Ltd.	Bangalore Joseph, (m.), 18, <i>Timber foreman's messenger.</i>	Gold	Deceased was sent up a shaft a few feet above the 55 foot-level in order to lubricate the pump rods. He appears to have climbed into the skip ropes with the result that he was caught by a descending skip and killed.
SUFFOCATION BY GASES—(1 death).						
96	Unknown.	Namdang Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Unknown, (m.), 32	Coal	Deceased's body was found whilst reopening an area of working which had been dammed off for nearly two months. Identification was not possible. No person had been missed. Inspection and inquiry made.
EXPLOSIVES—(16 deaths).						
97	27th January, 1 P.M.	Thorna Mine, Kodarma P. O., Bihar and Orissa.	Tata Sons & Co.	Talu Burbi, (m.), 36, <i>Sinker.</i>	Mica	Deceased and another miner were drilling a hole in a shaft 95 feet deep when a charge of dynamite exploded. Deceased was so severely injured that he died sixteen hours later. The other miner was also injured. The hole had penetrated an old shot hole that contained dynamite as the result of a misfire. The misfire was not suspected as the shot-firer claimed to have counted the full number of shots. Inspection and inquiry made.

98	20th March, 1 P.M.	Balaghat Mine, Balaghat P. O., Central Provinces.	Central Provinces Prospect- ing Syndicate, Ltd.	Sitaram Lodi, (m.), 20, Brijlall Marar, (m.), 30, <i>Shaft workers.</i>	Manganese	The two deceased were drilling in a socket left by a previous round of shots at the bottom of a prospecting shaft. This hole did not appear to have been fired at all, and there was probably a whole cartridge of gelignite left in it. It exploded, killing Sitaram outright and causing injuries to Brijlall from which he died an hour and a half later. The following day a primer cartridge was discovered among the <i>dbris</i> loaded out after the previous round of shots. The shots were fired electrically in series and it is evident that the wires of the detonator in the primer had been short circuited and so it was not exploded. The detonator exploded afterwards when tried. Five other men were in the shaft bottom. Inspection and inquiry made.
99	26th April, 7-16 A.M.	Rakha Hills Mine, Bakha Mines P. O., Bihar and Orissa.	Cape Copper Co., Ltd.	Nanu Nair, (m.), 32, Narayan Nair, (m.), 22, Gopal Nair, (m.), 20, <i>Miners.</i>	Copper	A miss-shot exploded during drilling operations at the face of an inclined shaft, killing Nanu Nair and Narayan Nair outright and injuring two others, one of whom Gopal Nair, died two days later. A diligent search had been made for the miss-shot, but without success and the man in charge ultimately decided to regard it as a miss-count. Inspection and inquiry made.
100	18th May, 9-16 A.M.	Footki Mine, Banajora P. O., Bihar and Orissa.	Eastern Coal Co., Ltd.	Ramlal Dosadh, (m.), 22, Ramdhani Dosadh, (m.), 23, Satus Dosadh, (m.), 18, <i>Stone-cutters.</i>	Coal	Whilst seven persons were at work in a narrow gallery an accidental ignition of gunpowder took place and they were all burnt. The three deceased died two days later. Inspection and inquiry made.
101	16th June, 6 P.M.	Central Dharmaband Mine, Katragarh P. O., Bihar and Orissa.	Central Dharmaband Coal Co., Ltd.	Bansi Ahir, (m.), 28, <i>Stone-cutter.</i>	Coal	By the premature explosion of one out of a round of eight shots deceased was so badly injured that he died in two hours. It is suspected that he and not the authorised shot-firer was firing the shots. Inspection and inquiry made.
102	24th July, 6-30 P.M.	Mayo Mine, Jhelum P. O., Panjab.	Government of India	Fatteh Mahomed, (m.), 22, Lal Din, (m.), 20, Karam Din, (m.), 25, Ahmed Din, (m.), 28, Rajwali, (m.), 25, <i>Miners.</i>	Salt	Whilst a gang of fourteen miners were at work in the end of a tunnel an explosion of some 20 lbs. of country gunpowder contained in a tin-canister took place. Seven men were severely burnt, and the five deceased succumbed to their injuries within a few days. The exact cause of the ignition could not be ascertained, but it was probably due to the careless handling of lights whilst shot holes were being charged or to a spark from a "Auka" found afterwards near the powder canister. Inspection and inquiry made.
103	7th December, 7-40 A.M.	Katho Mine, Mogok P. O., Burma.	Burma Ruby Mines, Ltd.	Ai Oo, (m.), 80, <i>Driller.</i>	Ruby	Deceased was drilling in an old shot hole which must have contained a part of a previous charge. This exploded and killed him.
IRRUPTIONS OF WATER OR FALLING INTO WATER—(3 deaths).						
104	9th April, 8-13 A.M.	Sripur Mine, Kalipahari P. O., Bengal.	Lodna Colliery Co., Ltd.	Bison Gope, (m.), 35, <i>Stone-cutter.</i>	Coal	While alighting from a bucket at the bottom of a sinking shaft, 900 feet deep, deceased failed to reach a platform 13 inches away and fell between the bucket and the platform into the sump, which was 16 feet deep and full of water. In falling he must have injured his head and caused unconsciousness. His body was recovered shortly afterwards. Artificial respiration was applied but without success. Inspection and inquiry made.
105	2nd July, 7-30 A.M.	Bejdih Mine, Sitarampur P. O., Bengal.	Equitable Coal Co., Ltd.	Radha Naman Ray, (m.), 27, <i>Mining sirdar.</i>	Coal	Deceased, against the orders of his superiors, entered the gallery connecting Nos. 2 and 3 pits. While he was there the gallery was flooded by water released at No. 2 pit by previous arrangement and he was drowned. His body was recovered half an hour later. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
IRRUPTIONS OF WATER OR FALLING INTO WATER—concl'd.						
106	26th July, 5 P.M.	Sukli Mine, Dongri P. O., Central Provinces.	Central India Mining Co., Ld.	Tijana, (f.), 12, Coolie.	Manganese	Deceased was found drowned in a shaft which was an extension of an old excavation. She had probably gone there for the purpose of drinking or washing.
107	5th November, 4 A.M.	Tadaini Mine, Domohanch P. O., Bihar and Orissa.	Johur Mull Sandur Mull	Gokal Meah, (m.), 40, Biju Singh, (m.), 25, Dilu Gope, (m.), 25, Churu Meah, (m.), 25, Miners. Jaman Gope, (m.), 30, Coolie.	Mica	While about sixty persons were present underground, a quantity of water, that had been impounded in some old workings, burst into the mine and flooded the dip workings. Of the above number twenty-eight men and women were submerged. Of these twenty-three were successful in making good their escape, but that of the five deceased was cut off and they were drowned. Inspection and inquiry made. <i>See Report, page 9.</i>
HAULAGE—(21 deaths).						
108	2nd January, 2 A.M.	South-East Baraboni Mine, Charanpur P. O., Bengal.	Maharaja M. C. Nandi	Mangal Manjhi, (m.), 20, Bankaman.	Coal	A set of eight empty tubs were pushed over the brow of an incline without being attached to the rope and deceased was caught and run over. He died almost immediately. Inspection and inquiry made.
109	20th February, 13-30 P.M.	Mudidih Mine, Sijua P. O., Bihar and Orissa.	Reliance Coal Co., Ld.	Mangal Rajwar, (m.), 25, Hookman.	Coal	Whilst a train of three tubs was being drawn up an incline a coupling shackle broke. The last tub ran wild down the incline and striking deceased inflicted an injury to the skull from which he died on the following day. The breaking of the shackle was due to a serious flaw in its construction. Inspection and inquiry made.
110	23rd February, 11 A.M.	Aldih Mine, Sitarampur P. O., Bengal.	Aldih Coal Co., Ld.	Khella Dasadh, (m.), 45, Pulley greaser.	Coal	Deceased was greasing a friction roller, while a set of four empty tubs was descending an incline. It is surmised that in stepping out of the way of the set, he missed his foothold on the sloping ballast and fell forward under the leading tub. He was killed outright. Inspection and inquiry made.
111	28th February, 2-30 P.M.	Dishargarh Mine, Dishargarh P. O., Bengal.	Equitable Coal Co., Ld.	Bonomali Bauri, (m.), 32, Rail coolie.	Coal	Through failing to give the signal to stop in time at the top of an underground haulage plane, a loaded set collided with a buffer and broke the rope. The set thus released ran back and became derailed at the points. Continuing forward it crashed into a prop behind which deceased had taken refuge, knocking it out and breaking his leg. He died three hours later from hemorrhage and shock. The lighting at the top of the plane was by safety lamps only and the signalling arrangements were primitive. Inspection and inquiry made. <i>See Report, page 9.</i>

112	5th March, 2 P.M.	Namdang Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Jawahir Passi, (m.), 40, <i>Trammer.</i>	Coal	Deceased went to sleep by the side of a tub road with his feet resting on the rails. A loaded tub was pushed out and ran over both feet inflicting injuries from which he died three months later. Inspection and inquiry made.
113	11th March, 6-15 A.M.	Sodepur No. 10 Mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ltd.	Dakhu Mullick, (m.), 22, <i>Trolleyman.</i>	Coal	A loaded tub ran wild through the failure to couple it to a set that was about to be lowered in a jig. Deceased, who was in charge of the jig bottom, and heard the tub coming, withdrew a short distance into a level, but not far enough to prevent his leg being caught by the tub and fractured. He was hurled across the road and sustained also a fracture of the skull which resulted in his death twenty-nine hours later. Inspection and inquiry made.
114	4th April, 4-30 A.M.	Barari Mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Madan Manjhi, (m.), 30, <i>Hookman.</i>	Coal	A train of empty tubs was being lowered rapidly down a haulage slope and into a level, when deceased in attempting to sprag the leading tub, slipped and fell under it. He died from his injuries five weeks later. Inspection and inquiry made.
115	15th April, 10 A.M.	Lakorka Mine, Katragarah P. O., Bihar and Orissa.	Lakorka Coal Co., Ltd.	Khedon Sheikh, (m.), 35, <i>Miner.</i>	Coal	Owing to the carelessness of the tubman four tubs were allowed to run wild down an incline. They dashed into a small sump, 40 feet beyond the end of the rails, breaking the suction pipe of a pump. Deceased who was dressing side coal at the point had his thigh fractured by the broken pipe. As a result of the accident double pneumonia set in and he died six days later. Inspection and inquiry made. <i>See Report, page 10.</i>
116	1st May, 4-30 A.M.	Jamadoba Mine, Jamadoba P. O., Bihar and Orissa.	Indian Collieries Syn- dicate, Ltd.	Rupia Ghatwarin, (f.), 30, <i>Coal-carrier.</i>	Coal	Whilst deceased was crossing an endless rope haulage road, carrying a pan of lighted coal, she was knocked down by a tub. She may have been half asleep, or perhaps the smoke from the pan blinded her. There was a proper road which she ought to have used. She died five days later from blood-poisoning. Inspection and inquiry made.
117	25th May, 11-30 P.M.	Joyramdanga Mine, Asansol P. O., Bengal.	New Birbhum Coal Co., Ltd.	Dharam Hazra, (m.), 40, <i>Hookman.</i>	Coal	A set of six empty tubs was being lowered too rapidly down an incline. The engine-man suddenly tightened the rope with the consequence that the ensuing jerk caused a link to break between the third and fourth tubs. The leading four tubs ran wild and severely injured deceased, who was stationed at No. 4 east level. He died from his injuries within a few hours. Inspection and inquiry made.
118	23th June, 11-30 A.M.	Sodepur Mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ltd.	Shaheb Singh, (m.), 50, <i>Tindal coolie.</i>	Coal	A return wheel was being taken up a self-acting incline, rising 1 in 6 and 300 feet in length. A set of five tubs, three and a half of which were loaded, formed the balancing load. The deceased was one of a gang of coolies, under a sirdar in charge of the balance load. Orders had been given that, should the set stop, it had to be restarted by pushing the tubs; on no account had any one to jump on the couplings between the tubs. Deceased disobeyed these orders and the set getting out of control dashed into a "dead end." He was caught between the tubs receiving abdominal injuries from which he died two days later. Inspection and inquiry made.
119	31st July, 10-30 A.M.	Titilmuri Mine, Sijua P. O., Bihar and Orissa.	Titilmuri Collieries, Ltd.	Sothe Roy, (m.), 47, <i>Miner.</i>	Coal	Deceased was in the main dip when a set of tubs ran wild. He tried to get into the landing but was caught and crushed against the corner of a pillar and killed outright. The set was provided with a bar-hook which acted properly as it threw the tubs off the line, but the tubs were carried down on their sides against the pillar. Inspection and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
HAULAGE—concl'd.						
120	19th August, 2 P.M.	Kusunda Mine, Kusunda P. O., Bihar and Orissa.	Patel & Co.	Gajadhar Sow, (m.), 20, Hookman.	Coal	Deceased was a hookman at a haulage incline and was riding on the front of a full set of tubs. In getting off he evidently miscalculated his distance, and getting off too late was fatally crushed between the set and the side of the road. The practice of riding on the tubs should not have been allowed. Inspection and inquiry made. See Report, page 10.
121	22nd August, 8 A.M.	West Ledo Valley Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Fakir Mekrani, (m.), 25, Coal-cutter.	Coal	Deceased was riding on a train of loaded tubs drawn by a locomotive. Whilst the train was passing through a tunnel he fell off and sustained injuries to which he succumbed a month later. Inspection and inquiry made.
122	30th August, 5 A.M.	Jogta Mine, Sijua P. O., Bihar and Orissa.	Agabeg Bros.	Kokil Bhuia, (m.), 25, Trolleyman.	Coal	Deceased in trying to get out of the way of a runaway tub on a haulage incline fell and sustained a fractured skull. He never recovered consciousness and died five days later. Inspection and inquiry made.
123	8th September, 9-30 P.M.	Serampur Mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Manik Hazam, (m.), 60, Trolleyman.	Coal	Deceased was engaged in lifting a derailed tub when a set of five empty tubs which had been arrested a short distance away on a grade of 1 in 8 by means of wedges, overran the latter and collided with the derailed tub. He was pinned against the side of the road, and sustained injuries from the effects of which he died an hour later. Inspection and inquiry made.
124	19th September, 9 A.M.	Mohpani Mine, Mohpani P. O., Central Provinces.	Great Indian Peninsula Railway.	Budha Katia, (m.), 30, Carpenter's coolie.	Coal	During the absence of the mate deceased went through a fence into an incline. He was caught by an empty set of tubs and died almost immediately.
125	16th October, 10-30 A.M.	West Ledo Valley Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ltd.	Basha Kachi, (m.), 26, Tramman.	Coal	Deceased had been employed in pushing tubs on a narrow tram road for some months. On this occasion he shouted to the other trammer to push a tub past him. He crouched on one side of the road to let the tub pass. There was room for him and presumably he thought he was clear, but the tub struck him in passing and the blow broke his neck and killed him immediately. Inspection and inquiry made.
126	23rd October, 11-30 A.M.	New Tetturia Mine, Katrosagar P. O., Bihar and Orissa.	New Tetturia Coal Co., Ltd.	Lolji Bhuia, (m.), 25, Trolleyman.	Coal	As a train of eleven empty tubs was being lowered down an incline, in some way or other the leading two became detached and ran wild. One of them ran over deceased who was standing at the junction of the main incline with a branch level, waiting for the set to come down. He sustained a wound from which he died within half an hour. Inspection and inquiry made.
127	2nd November, 8-30 A.M.	Khost Mine, Khost P. O., Baluchistan.	North-Western Railway	Karim Din, (m.), 18, Carpenter's coolie.	Coal	A set of empty tubs was being lowered into an incline. Deceased was standing at a landing and he expected that the set would stop there for himself and others to get in and be drawn out of the mine. He attempted to get into the set before the set was stopped and his neck was squeezed between the

128	20th December, 11-30 A.M.	Jamgram Mine, Panurra P. O., Bengal.	Barakar Coal Co., Ld.	Dhani Korin, (f), 50, Loader.	Coal	top of the tub and a landing plant about four inches above. He died in a few minutes. Owing to the inability of the trammer to insert a second sprag a loaded tub ran wild down a grade of 1 in 11 and collided with some empty tubs standing at a shaft bottom. These tubs struck deceased and carried her on to the sump board. She sustained internal injuries from the effects of which she died two hours later. Inspection and inquiry made.
SUNDRIES UNDERGROUND.—(10 deaths).						
129	12th January, 10 A.M.	Payay Mine, Tavoy P. O., Lower Burma.	Rangoon Mining Co., Ld.	Ah Swe, (m), 25, Quarryman.	Wo lfram	Whilst working on the face of a quarry 100 feet deep the deceased slipped and fell a distance of 20 feet, sustaining injuries from which he died in hospital ten days later. Inspection and inquiry made.
130	4th April, 8-30 P.M.	Charanpur Mine, Charanpur P. O., Bengal.	Apcar & Co.	Longra Bauri, (m), 28, Timber mistri.	Coal	Deceased, a sirdar, and another timber mistri were watching the roof while a prop was being withdrawn from a goaf. As the roof began to "weight" the sirdar gave orders for every one to leave the gallery. Deceased in running out slipped up a small embankment and falling fractured his jaw. Concussion of the brain ensued and he died two days later. Inspection and inquiry made.
181	10th April, 3 P.M.	Jibutil Mine, Morriston P. O., Madras.	Jibutil (Anantapur) Gold Mines, Ld.	Kunji Ahmed, (m), 25, Hand jumper coolie.	Gold	Deceased stepped on some drills. He slipped and fell down an almost vertical winze about 70 feet deep and was killed.
182	8rd May, 2 P.M.	Dishargarh Mine, Dishargarh P. O., Bengal.	Equitable Coal Co., Ld.	Guhtram Bauri, (m), 24, Onsetter.	Coal	Deceased had removed the binding tape covering a joint in an electrical cable. In attempting to recover the joint with string and tape he received a shock which caused his death. Inspection and inquiry made.
183	22nd September, 10-10 A.M.	Sodepur Mine, Sitarampur P. O., Bengal.	Bengal Coal Co., Ld.	Bhusan Bauri, (m), 35, Pump khalasi. Raman Bauri, (m), 25, Fitter. Uday Bauri, (m), 25, Fitter's coolie.	Coal	The deceased were engaged in repairing a joint in the delivery pipe of an electric pump when a piece of side coal fell in a gallery and brought one of the electric conductors into contact with the earth wire. The current went to earth partially or wholly through the delivery pipe and the bodies of the men. Death appears to have been instantaneous. Two of the deceased received a shock first and the third while attempting to rescue them in which operation a fourth man was rendered unconscious but recovered. Inspection and inquiry made. See Report, page 11.
184	20th October, 2 A.M.	Khost Mine, Khost P. O., Baluchistan.	North-Western Railway.	Attar Khan, (m), 20, Carpenter's coolie.	Coal	Deceased was sitting on a plank wall of a shoot stenton. Apparently he was asleep for he fell off into the goaf a distance of about 30 feet down at an angle of 60 degrees. He died thirty-two hours later from injuries received.
185	10th November, 8-20 A.M.	Khost Mine, Khost P. O., Baluchistan.	North-Western Railway.	Sant Singh, (m), 25, Tram munshi.	Coal	Deceased was crouching by the side of the road to let a tub pass and he was killed by his head being pinched between the tub and a prop. One trammer with a similar tub had passed him safely a moment before. The second trammer apparently warned the deceased who shouted to him to come on.
186	26th November, 6 A.M.	Chinohuria Mine, Assensol P. O., Bengal.	Baraboni Coal Concern, Ld.	Budhari Manjhi, (m), 30, Minor.	Coal	While deceased and another minor were pushing a loaded tub over a jig brow a cross-beam on which their lamps were suspended was partially dislodged and the lamps were extinguished. In the confusion which followed deceased slipped on the flat sheets and fell with such force on a tram rail that he sustained a fracture of the base of the skull, and died four hours later. Inspector and inquiry made.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
SURFACE MACHINERY—(3 deaths).						
137	17th May, 9-45 A.M.	Barari Mine, Jamadoba P. O., Bihar and Orissa.	East Indian Coal Co., Ltd.	Syed Goffur, (m.), 45, <i>Coolie.</i>	Coal .	A cylinder, weighing nearly three tons, was being lifted when one link of the chain of the Weston's Differential pulley block employed broke and the cylinder fell a height of four feet. It rolled over and struck deceased. His spinal column was fractured and he died nearly a month later. Another man sustained a fractured thigh. Inspection and inquiry made.
138	14th October, 12-45 P.M.	North Anantapur Mine, Morrison P.O., Madras.	North Anantapur Gold Mines, Ltd.	Naranyansami, (m.), 18, <i>Fitter's coolie.</i>	Gold .	Deceased was employed on a drilling-machine which was operated by a 2-inch belt, driven off the mill line shafting. The machine became jammed and deceased knocked off the belt which was wound round the shafting. He endeavoured to uncoil it without stopping the shafting and was killed by being caught in the belt.
139	9th November, 10 A.M.	South Kustore Mine, Kustore P.O., Bihar and Orissa.	Raniganj Coal Association, Ltd.	Dukhan Teli, (m.), 18, <i>Screening plant khalasi.</i>	Coal .	Acting without orders, deceased put his hand on the steel belt of an elevator in order to test its tightness. He was drawn into the machinery and killed on the spot. Inspection and inquiry made.
ON SURFACE RAILWAYS AND TRAMWAYS BELONGING TO THE MINE—(3 deaths).						
140	20th September, 3 P.M.	Tirody Mine, Tirody P. O., Central Provinces.	D. Luxminarayan	Ramadin Kol, (m.), 35, <i>Coolie.</i>	Manganese	Deceased was recovering some packing stones from a debris tip, in order to ballast a tram line at a breach, when a loaded tub was brought along and became derailed, with the result that the contents were discharged on to deceased. He died from his injuries six days later. Inspection and inquiry made.
141	30th October, 8-30 A.M.	Donia Mine, Manharpur P. O., Bihar and Orissa.	Bengal Iron and Steel Co., Ltd.	Jhiringa, (m.), 35, <i>Station coolie.</i>	Iron .	A "carrier" lost its grip of the hauling rope on an aerial ropeway, unnoticed by the workman it ran into the terminal station, knocked against another "carrier" which was being unloaded with the result that deceased was killed.
142	25th November, 11 A.M.	Rakha Hills Mine, Rakha Mines P. O., Bihar and Orissa.	Cape Copper Co., Ltd.	Latohu, (m.), 21, <i>Tram coolie.</i>	Copper .	Deceased was accidentally jammed between two trolleys which collided on a surface tramway. He was sent to hospital, but refused to stay there and was removed by his friends to his village, where he died a week later.
MISCELLANEOUS ON SURFACE—(11 deaths).						
143	2nd February, 11 A.M.	Balaghat Mine, Dongri P. O., Central Provinces,	Central Provinces Prospecting Synd., Ltd.	Sogni Gond, (f.), 13, <i>Earth-worker.</i>	Manganese .	Deceased overbalanced herself as she was throwing a basket of spoil over the waste-heap and rolled to the bottom of the excavation, about 25 feet below, fracturing her skull. Her parents refused to allow her to be taken to hospital and took her away to their own village where she died eight days afterwards. Inspection and inquiry made.

144	26th February, P	Dherajoba Mine, Kamnda P. O., Bihar and Orissa.	East Indian Coal Co., Ld.	Fran Mahato, (m.), 55, <i>Loading coolie.</i>	Coal .	Deceased on a dark and stormy night appears to have climbed over a wall fencing an incline and to have fallen to the bottom of a cutting where his body was afterwards found. Inspection and inquiry made.
145	2nd July, 1-30 P.M.	Lakorka Mine, Katrasgarh P. O., Bihar and Orissa.	Lakorka Coal Co., Ld.	Kisto Mondal, (m.), 55, <i>Trolleyman.</i>	Coal .	Deceased sat down in a window of a haulage engine-house and dozing off to sleep fell a distance of 6 feet on to his head. He injured his brains and died twenty-four hours later. Inspection and inquiry made.
146	17th July 10-30 A.M.	Hermyingyi Mine, Tavoy P. O., Burma.	Hermyingyi Mining Co., Ld.	Hun Kit, (m.), 37, Yang Cheoung, (m.), 42, <i>Sluicing coolies.</i>	Wolfram	Tributors were sluicing on the slope of a hill, apparently they turned on too much water with the result that about fifty tons of earth and rock slipped down on to the two deceased and killed them. Another man was injured.
147	9th August, 12 noon.	Byoukhoung Mine, Tavoy P. O., Burma.	Tavoy Concessions, Ld.	L. B. Worthington, (m.), 35, <i>Mining engineer.</i>	Wolfram .	Deceased was struck by a falling tree and died the following morning on his way to hospital.
148	10th August, 9 A.M.	Esat Kurkend Mine, Karkend P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Damri Sarri, (m.), 35, <i>Haizi coolie.</i>	Coal .	While a pulley was being lowered from a temporary head-gear, which was being dismantled, one of the anchor ropes, to which the guy ropes of the derrick were attached, broke and the derrick fell striking deceased on the head and causing injuries from which he died about six hours later. Inspection and inquiry made.
149	18th September, 8-50 P.M.	Sorampur Mine, Giridih P. O., Bihar and Orissa.	East Indian Railway Co.	Biju Manjhi, (m.), 22, <i>Coolie.</i>	Coal .	Deceased, with four others, was assisting to remove the door of a coke oven for repairs when the hook, by which it was suspended, gave way and the door fell upon him. He died a few minutes later from the effects of his injuries. Inspection and inquiry made.
150	21st September, 4-15 P.M.	Sitalpur Mine, Dishargarh P. O., Bengal.	Bengal Coal Co., Ld.	Sudam Bauri, (m.), 34, <i>Coolie.</i>	Coal .	An excavation, measuring 10' x 6' at the top x 7' x 3' deep, was being made in compact earth on the surface when a mass of earth, weighing about 5 tons, slipped from one of the sides and struck deceased on the back killing him instantly. The side was sloped at an angle of only 7 $\frac{1}{4}$ ° from the vertical. Inspection and inquiry made.
151	10th October, 2-30 P.M.	Byoukhoung Mine, Tavoy P. O., Burma.	Tavoy Concessions, Ld.	Cow Shoave, (m.), 30, <i>Coolie.</i>	Wolfram .	Deceased was killed by the fall of a large tree. He was said to have been working about 90 feet away. Four other coolies were injured.
152	11th December, 5 P.M.	Khaira Mine, Kodarma P. O., Bihar and Orissa.	Tata Sons & Co.	Jodhon Modi, (m.), 20, <i>Coolie.</i>	Mica .	Deceased, together with another man and woman were engaged in collecting mica from an old waste-heap into which they dug a hole 7 or 8 feet deep. The sides suddenly collapsed and all three were buried. They were taken out alive but deceased expired immediately afterwards probably from shock.

APPENDIX II—contd.

Fatal Accidents, 1914—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.
DEATHS NOT INCLUDED IN THE STATISTICS—(36 deaths).							
1	18th January, 9 A.M.	Bhelatand Mine, Sijua P. O., Bihar and Orissa.	Tata Iron and Steel Co., Ld.	Rameswar Dass, (m.), 33, Sirdar.	Coal .	Not a mining accident.	Deceased, using a crowbar, attempted to unram a shot hole charged with dynamite and a detonator. An explosion took place and he was killed on the spot. Inspection and inquiry made.
2	22nd January, 3 P.M.	New Tetturia Mine, Katragarh P. O., Bihar and Orissa.	New Tetturia Coal Co., Ld.	Fulia, (f), 3.	Coal .	Not employed.	Deceased went to a boiler tank presumably to drink and in stooping over the tank-wall must have overbalanced herself and been drowned. Inspection and inquiry made.
3	28th January, 6 P.M.	Chora Mine, Chora P. O., Bengal.	N. C. Sircar & Co. .	Mahabir Passi, (m.), 3.	Coal .	Not employed.	A miner took a cartridge of country gunpowder in a tin canister to his house leaving the canister outside the door. He should have taken it straight back to the magazine. Deceased who was his son presumably opened the canister and put the cartridge on the fire, when it exploded causing extensive burns from which he died next morning. Inspection and inquiry made.
4	21st February, 9-30 A.M.	North Anantapur Mine, Morrison P. O., Madras.	North Anantapur Gold Mines, Ld.	Yellamah, (f), 60.	Gold .	Not employed.	Deceased was standing on a surface tramway and was knocked down and killed by a tram loaded with coal which coolies were pushing. She was said to have been deaf.
5	25th February, 10 P.M.	Kajora Mine, Ondal P. O., Bengal.	Kajora Coal Co. .	Lakshmi Manjbian, (f), 18, Coal kamini, Budhani Manjbian, (f), 4.	Coal .	Not a mining accident.	The two deceased children were asleep in their hut, when the next hut caught fire owing to a lighted lamp which had been left burning. Their mother and grand-mother who were also in the hut asleep rushed out without them. Lakshmi came out some minutes later extensively burnt from the effects of which she died. Budhani was burnt to death inside and only her charred remains were found. Inspection and inquiry made.
6	6th March, 2 P.M.	Kasbidhans Mine, Sansar P. O., Central Provinces.	Indian Manganese Co., Ld.	Bhaga, (f), 65.	Manganese .	Not employed.	When standing on the edge of an excavation she fell into it, a depth of six feet, and received such injuries that she died three hours later.
7	7th March, unknown.	Searsol Mine, Searsol P. O., Bengal.	Bani Shyama Sundari Debi.	Puti Sundri, (f), 11.	Coal .	Not employed.	Deceased was drowned in an abandoned unfenced shaft. It is surmised that she accidentally fell into it in the dark. Inspection and inquiry made and prosecution instituted against the owner of the estate. See Report, page 15.
8	Prior to 13th March.	Bhusakajuri Mine, Asansol P. O., Bengal.	Bhusakajuri Coal Co., Ld.	Sonia Kol, (f), 23, Coal-carrier.	Coal .	Not a mining accident.	Deceased had a quarrel with her husband on Monday evening and her body was found in a well on Friday morning. There was a wall round the well about 2' 6" high. It is presumed to have been a case of suicide. Inspection and inquiry made.

9	14th March, 6 P.M.	Kujama Mine, Jharia P. O., Bihar and Orissa.	Basra Coal Co.	Ganga Mallab, (m.), 7.	Coal	Not employed.	Deceased was on the edge of a quarry where blasting was going on and was struck by a stray stone. He received injuries from which he died six days afterwards. Inspection and inquiry made.
10	31st March, 10 A.M.	Bhatdih Mine, Mohoda P. O., Bihar and Orissa.	Bengal Bhatdih Coal Co., Ld.	Murti Peldarin, (f.), 45.	Coal	Not employed.	Deceased was found drowned in a boiler tank but there was no evidence to show how she came to be there. Inspection and inquiry made.
11	9th April, about noon.	Borra Mine, Sitarampur P. O., Bengal.	New Birbhum Coal Co., Ld.	Millo Gopini, (f.), 23.	Coal	Not employed.	Deceased was found floating on the water in an old trial shaft which was incompletely fenced. It is presumed she committed suicide. Inspection and inquiry made and prosecution initiated against manager. See Report, page 14.
12	21st April, 2 A.M.	Kurkend Mine, Kurkend P. O., Bihar and Orissa.	R. B. Sircar & Sons	Somaria Passi, (f.), 26.	Coal	Not employed.	Deceased had been demoted for some time. She left her home at midnight and after taking off all her clothes and leaving them on the surface threw herself down a shaft 211 feet deep. She was killed on the spot. Inspection and inquiry made.
13	Unknown, presumably 22nd April.	Jairamanga Mine, Asansol P. O., Bengal.	New Birbhum Coal Co., Ld.	Darasnai Bania, (f.), 65.	Coal	Not employed.	Deceased during a fit of temporary insanity, committed suicide by jumping down a shaft. Inspection and inquiry made.
14	3rd May, 5 P.M.	Golukdih Mine, Jharia P. O., Bihar and Orissa.	N. M. Chowdhury & Co.	Nijam Bilaspuri, (m.), 2½.	Coal	Not employed.	Deceased was left alone in a "dhowra" from where he was afterwards missed. His body was discovered subsequently lying in an excavation with his head in water which was about 3 feet deep.
15	4th May, 12 noon.	Baraboni Mine, Asansol P. O., Bengal.	Baraboni Coal Concern, Ld.	Maku Manjhan, (f.), 9	Coal	Not employed.	Deceased, with four companions, went to the quarry to bathe. It is assumed that walking into deep water, she slipped and fell, being drowned before aid could be called. Inspection and inquiry made.
16	6th May, 5-45 P.M.	Kodaigaon Mine, Saonea P. O., Central Provinces.	Indian Manganese Co., Ld.	Sorwarman, (m.), 4.	Manganese	Not employed.	Deceased was sitting about 8 feet away from his parents who were quarrying ore, when a fall of earth took place and killed the child.
17	20th May, 11-30 A.M.	Sijua Mine, Sijua P. O., Bihar and Orissa.	Sijua Coal Co., Ld.	Gunpatia, (m.), 13, Labourer.	Coal	Not a mining accident.	Deceased was runover during hand shunting operations on an East Indian Railway Company's siding. He was not employed there but should have been at work 300 yards away. He died four weeks later. Inspection and inquiry made.
18	23rd May, 6-45 A.M.	Borra Mine, Sitarampur P. O., Bengal.	New Birbhum Coal Co., Ld.	Ram Gope, (m.), 21	Coal	Not a mining accident and not employed.	Deceased, in attempting to jump into the brake-van of a pilot train leaving the colliery, slipped and fell under the wheels of the train. He died immediately afterwards from the effects of the injuries he received. Inspection and inquiry made.
19	27th May, 6-30 A.M.	Kujama Mine, Jharia P. O., Bihar and Orissa.	Khanji and Sanji Nanji	Karu Bhuian, (m.), 1½ yr.	Coal	Not employed.	While a train of five tubs was being pushed by hand on a surface tram line the front tub became uncoupled and ran by itself down a straight grade. Deceased, who had strayed on to the line, was runover and sustained injuries which resulted in death an hour later. Inspection and inquiry made.
20	27th May, 3 P.M.	Howra Mine, Jamadoba P. O., Bihar and Orissa.	Eastern Coal Co., Ld.	Rameswar, (m.), 9 months.	Coal	Not employed.	Deceased crawled out of the house while his parents were absent and fell into a hole, 10' square x 2' deep, full of water, about ten yards away from the house, and was drowned. Inspection and inquiry made.

APPENDIX II—concl'd.

Fatal Accidents, 1914—conold.

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.
DEATHS NOT INCLUDED IN THE STATISTICS—conold.							
21	25th June, 7-6 P.M.	Ena Mine, Dhanbad P. O., Bihar and Orissa.	North-West Coal Co., Ld.	Sobdul Meah, (m), 33, Fireman.	Coal	Not a mining accident.	The body of the deceased was found floating in a fenced boiler tank. It was thought that he was intoxicated when he fell in. Inspection and inquiry made.
22	Unknown, probably 12th July.	South East Baraboni Mine, Charanpur P. O., Bengal.	Maharaja M. C. Nandi	Malho Manjhian, (f), 20, Coal-carrier.	Coal	Not a mining accident.	Deceased, it is surmised, in attempting to get on to the top of the surrounding wall of a well, or whilst standing upon the top thereof for purpose of drawing water overbalanced and fell in. The body was recovered two days later. Inspection and inquiry made.
23	14th July, 3-40 P.M.	West Lodo Valley Mine, Margherita P. O., Assam.	Assam Railways and Trading Co., Ld.	Ramindhor, (m), 23, Fireman.	Coal	Not a mining accident.	He appears to have died as the result of a blow. His aggressor was convicted of a criminal offence. Inspection and inquiry made.
24	Unknown, prior to 22nd July.	Gobindpur Mine, Katrasgarh P. O., Bihar and Orissa.	Gobindpur Coal Co., Ld.	Benia Telin, (f), 10.	Coal	Not a mining accident and not employed.	The body of the deceased was found floating in a well near No. 5-11 Incline. It seems to have been a case of suicide as there had been a quarrel on the previous Monday after which deceased was not seen again. Inspection and inquiry made.
25	15th August, 1 A.M.	Chowraai Mine, Dishargarh P. O., Bihar and Orissa.	Equitable Coal Co., Ld.	Karna Domin, (f), 3.	Coal	Not employed.	The body of the deceased was found drowned in a boiler tank, which was not sufficiently fenced. Inspection and inquiry made.
26	20th August, 7 A.M.	Godhur Mine, Kuaranda P. O., Bihar and Orissa.	S. B. Raha and Sons.	Unknown, (m), 25.	Coal	Not a mining accident and not employed.	Deceased was found dead in a small tank 5 feet deep. The post-mortem examination revealed the fact that his spleen was ruptured. There was no evidence to show whether deceased came by his death by accident or violence. Inspection and inquiry made.
27	11th September, 11-45 A.M.	Belrui Mine, Sitarampur P. O., Bengal.	New Birbhum Coal Co., Ld.	Karuna Domin, (f), 32.	Coal	Not employed.	Deceased while crossing a surface tramway was run over by a tram and killed. Inspection and inquiry made.
28	7th October, 5 P.M.	Balaghat Mine, Dongri P. O., Central Provinces.	Central Provinces Prospect- ing Syndicate, Ld.	Bhaiyal Lal, (m), 2.	Manganese	Not employed.	As two loaded wagons were being taken along a tramway, deceased's parents pushing the first wagon, deceased suddenly ran towards them and was run over by the second wagon, sustaining injuries from which he died.
29	10th October, 6 A.M.	Murulidih Mine, Mahoda P. O., Bihar and Orissa.	Bengal Coal Co., Ld.	Mungia Kurmin, (f), 11, Wharf labourer.	Coal	Not a mining accident.	Deceased was underneath a truck helping to push it along a siding. As the truck began to gather speed she attempted to get out from underneath by passing between the front and rear-wheels,

30	12th October, not known.	Searsol Mine, Searsol P. O., Bengal.	Rani Shama Sundari Devi.	Makan Dass, (m.), 45, <i>Village cartier.</i>	Coal . .	Not employed.	Whilst so doing her clothes got caught in the rear-wheel and she was dragged along the ground sustaining injuries from which she died in hospital four hours later. Inspection and inquiry made. <i>See Report, page 12.</i>
31	Unknown, prior to 13th October.	Bhulanbarari Mine, Jamadoba P. O., Bihar and Orissa.	Bhulanbarari Coal Co., Ld.	Unknown, (f.), 32.	Coal . .	Not employed.	Deceased was found drowned in the surface cutting of an abandoned incline. Inspection and inquiry made.
32	Not known, prior to 5th November.	Sudriadih Mine, Nowagarh P. O., Bihar and Orissa.	Sudriadih Coal Co., Ld.	Thakuri Bhagat, (m.), 12.	Coal . .	Not employed.	Deceased went to an old shaft, fenced off, to procure water. It is surmised that whilst so doing he overbalanced himself and fell in. His body was found two days later. Inspection and inquiry made.
33	7th November, 10 A.M.	Jóyrampur Mine, Jharia P. O., Bihar and Orissa.	M. V. A. Coal Concern	Bhola Boldar, (m.), 12, <i>Loading coolie.</i>	Coal . .	Not a mining accident.	Deceased attempted to open the lower door of a covered steel broad-gauge wagon standing on the colliery siding. Whilst so doing, it fell back upon his head, inflicting injuries from which he died within an hour. Inspection and inquiry made.
34	9th November, 5 A.M.	Patiana Mine, Kulti P. O., Bengal.	Nagendra Nath Mandal	Ashu Bauri, (m.), 8.	Coal . .	Not employed.	Deceased fell into a shaft 44 feet deep, containing 6 feet of water and was drowned. The shaft top was not completely fenced. Inspection and inquiry made and prosecution initiated against owner.
35	21st November, 9 A.M.	East Kurkend Mine, Kirkend P. O., Bihar and Orissa.	Marine Coal Co., Ld.	Fulin Baurin, (f.), 50, <i>Domestic servant.</i>	Coal . .	Not employed.	Owing to the collapse of underground workings an area of the surface, measuring 300' x 300', subsided to a depth of 8 feet. Deceased was resident in one of three coolie barracks, involved in the subsidence and was killed by falling masonry. Another woman was slightly injured. Inspection and inquiry made.

APPENDIX II—contd.

Table No. 2.

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1914.

PROVINCE.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.			SERIOUS ACCIDENTS.			DEATHS OF 1,000 PERSONS EMPLOYED.			
			Number of persons fatal accidents.	NUMBER OF DEATHS.		Number of serious non-fatal accidents.	NUMBER OF PERSONS SERIOUSLY INJURED.		Total number of persons injured.	Below ground.	Above ground.	Per 1,000.
				Below ground.	Above ground.		Total deaths.	Below ground.				
A.—COAL.												
Bihar and Orissa	Hazaribagh { Bokaro-Ramgarh. Giridih	210	...	...	...	...	...	...	...	...	...
	Hazaribagh { Jharia	8,679	5	9	1	10	15	11	4	15	1.72	
	Manbhum, Jharia	376	...	...	...	...	...	...	...	...	...
	Manbhum, Jharia	74,496	53	58	5	68	61	36	25	61	1.24	
	Manbhum, Jharia	5,332	4	5	...	5	1	1	...	1	1.43	
	Sonthal Parganas, Raniganj	30	...	...	...	...	...	...	...	...	...
	Sonthal Parganas, Raniganj	135	...	...	...	...	...	...	...	...	...
	Sonthal Parganas, Raniganj	808	...	...	...	...	2	1	1	2	...
Sambalpur, Hingl-Bampur	715	...	...	...	...	...	...	...	...	...
	TOTAL	90,681	62	72	6	78	79	49	30	79	1.26	
Bengal	Bankura, Raniganj	81	...	...	...	...	...	...	...	...	...
	Birbhum	33	...	...	...	...	...	...	...	...	...
	Burdwan	38,765	34	40	1	41	33	31	8	39	1.56	
	TOTAL	38,879	34	40	1	41	33	31	8	39	1.56	
Central Provinces	Chhindwara, Pench Valley	1,240	1	1	...	1	3	2	1	3	1.12	
	Narsinghpur, Mohpani	1,264	1	1	...	1	2	2	...	2	1.25	
	Chanda, Ballarpur	708	1	1	...	1	2	2	...	2	1.49	
	Yeotmal	42	...	...	...	...	...	...	...	...	...
	TOTAL	3,254	3	3	...	3	7	6	1	7	1.35	
Panjab	Jhelum	901	2	2	...	2	2	3	...	3	3.15	
	Shahpur	101	...	...	...	...	...	...	...	...	...
	Mianwali	169	...	...	...	...	...	...	...	...	...
	TOTAL	1,161	2	2	...	2	2	3	...	3	2.59	
Assam	Lakbimpur	2,678	13	15	...	15	78	59	22	81	8.03	
	Naga Hills	190	1	1	...	1	...	...	...	27.03	...
	TOTAL	2,868	14	16	...	16	78	59	22	81	8.39	
Baluchistan	Kalat	62	...	...	...	...	...	...	...	...	...
	Quetta, Fishin	117	1	1	...	1	...	...	...	12.82	...
	Sibi, Khos, etc.	792	4	4	...	4	5	5	...	5	7.89	
	Loralai, Loralai	30	...	...	...	...	...	...	...	...	...
	TOTAL	1,001	5	5	...	5	5	5	...	5	7.65	
North-West Frontier Province.	Hazara	7	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (COAL)	137,851	130	138	7	145	204	168	61	214	1.66	

APPENDIX II—contd.

Table No. 2—contd.

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1914—contd.

PROVINCE.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.			SERIOUS ACCIDENTS.			DEATH-RATE PER 1,000 PERSONS EMPLOYED.				
			Number of separate fatal accidents.	NUMBER OF DEATHS.		Number of persons injured in fatal accidents.	NUMBER OF PERSONS SERIOUSLY INJURED.		Below ground.	Above ground.	Below and above ground.		
				Below ground.	Above ground.		Total deaths.	Below ground.				Above ground.	Total number of persons injured.
B.—MICA.													
Bihar and Orissa	Monghyr	618	...	...	...	...	...	...	...	...	...
	Hazaribagh	9,765	4	8	1	9	2	3	...	3	1.47	.30	1.08
	Gaya	2,006	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	11,384	4	8	1	9	2	3	...	3	1.14	.23	.79
Madras	Coimbatore	18	...	...	...	...	...	...	...	...	...	...	...
	Nellore	4,928	...	...	...	...	3	4	...	4	...	...	...
	Salom	328	...	...	...	...	...	...	...	...	...	...	...
TOTAL	5,289	...	...	...	...	3	4	...	4	...	...	...
Rajputana	Ajmer	182	1	1	...	1	...	...	...	...	9.28	...	5.49
	Merwara	150	...	...	...	...	...	...	...	...	...	...	...
	TOTAL	332	1	1	...	1	...	...	...	...	4.90	...	8.01
GRAND TOTAL (MICA)		16,985	5	9	1	10	5	7	...	7	.82	.16	.59
C.—MANGANESE.													
Central Provinces	Nagpur	3,189	...	...	...	...	1	...	...	1	...	...	...
	Bhandara	1,731	1	1	...	1	1	...	1	1	.97	...	.58
	Balaghat	4,591	4	3	2	5	3	1	2	3	.73	4.15	1.09
	Chhindwara	1,135	1	1	...	1	1	1	...	1	.94	...	.88
	Jabalpur	28	...	...	...	...	...	...	...	...	...	...	...
TOTAL	10,674	6	5	2	7	6	2	4	6	.59	.93	.66	
Madras	Visagapatam	1,761	...	...	...	...	1	1	...	1	...	...	...
Bombay	Panch Mahals	626	...	...	...	...	1	1	...	1	...	...	...
GRAND TOTAL (MANGANESE)		13,061	6	5	2	7	8	4	4	8	.48	.74	.54
D.—LIMESTONE.													
Central Provinces	Jabalpur-Katni	3,324	...	...	...	...	...	...	...	...	...	...	...
Punjab	Hocharpur	80	...	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL (LIMESTONE)		3,384	...	...	...	...	...	...	...	...	...	...	...
E.—SALT.													
Punjab	Shahpur	32	...	...	...	...	...	...	...	...	...	...	...
	Jhalum	857	1	5	...	5	3	3	...	3	6.11	...	5.86
	Mianwali	73	...	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL (SALT)		962	1	5	...	5	3	3	...	3	5.42	...	5.20

APPENDIX II—contd.

Table No. 2—contd.

Statement of fatal and serious accidents in and about mines regulated by the Indian Mines Act, 1901, during the year 1914—contd.

PROVINCE.	District and mineral field.	Total average number of persons employed daily.	FATAL ACCIDENTS.				SERIOUS ACCIDENTS.			DEATH-RATE PER 1,000 PERSONS EMPLOYED.			
			Number of separate fatal accidents.	NUMBER OF DEATHS.			Number of serious non-fatal accidents.	NUMBER OF PERSONS SERIOUSLY INJURED.			Below ground.	Above ground.	Below and above ground.
				Below ground.	Above ground.	Total deaths.		Below ground.	Above ground.	Total number of persons injured.			
Bihar and Orissa	Singhbhum		M.—COPPER ORE.										
		1,867	4	5	1	6	3	1	2	3	12.44	.68	3.21
Central Provinces	Jabalpur		N.—FULLER'S EARTH.										
		
Bihar and Orissa	Palamanu	23	O.—CLAY.										
Central Provinces	Jabalpur	237	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (CLAY)	260	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Drug	92	P.—GALENA.										
		
Central Provinces	Jabalpur	33	Q.—BAUXITE.										
		
Bihar and Orissa	Hasaribagh	15	R.—TIN.										
Burma	Mergui (Maliwan)	†	...	...	...	...	...	...	...	...	...	...	...
	Tavoy	120	...	...	...	...	...	...	...	...	...	...	...
	GRAND TOTAL (TIN)	135	...	...	...	...	...	...	...	...	...	...	...
Central Provinces	Jabalpur	92	S.—STREATITE.										
Madras	Kurnool	106	...	...	...	...	1	1	1	...	...	...	...
	GRAND TOTAL (STREATITE)	198	...	...	...	...	1	1	1	...	...	...	...
Burma	Amberst	641	T.—GRANITE.										
		
Madras	Trichinopoly	66	U.—CORUNDUM.										
		
Madras	Nellore	‡	V.—SAMARSKITE.										
		
Bihar and Orissa	Gaya	§	W.—TRIPLITE.										
		
Bihar and Orissa	Gaya	|| 98	X.—PITCHBLEND.										
		
	GRAND TOTAL (ALL MINERALS)	185,311	152	174	17	191	245	183	75	258	1.45	.26	1.03

* Figures included with those for Central Provinces Limestone.
 † " " " " " Mergui Wolfram.
 ‡ Figures including those for Tripilite.

§ Figures included with those for Madras, Nellore, Mica.
 || " " " " " Gaya Pitchblende.

APPENDIX II—contd.

Table No. 3.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1914, classified according to the age and sex of the workers.

MINERAL.	PROVINCE AND MINERAL FIELD.	Number of separate fatal accidents.	NUMBER OF DEATHS.								TOTAL BELOW AND ABOVE GROUPED.
			BELOW GROUPED.				ABOVE GROUPED.				
			Adult males.	Adult females.	Children (under 13).	Total.	Adult males.	Adult females.	Children (under 13).	Total.	
COAL	Baluchistan { Quetta-Pishin Sibi	1 4	1 4	...	...	1 4	...	...	...	...	1 4
	TOTAL BALUCHISTAN	5	5	...	...	5	...	...	...	...	5
	Bihar and Orissa. { Giridih Jharia Raniganj	5 53 4	7 47 4	2 11 1	...	9 58 5	1 5 ...	...	...	1 5 ...	10 63 6
	TOTAL BIHAR AND ORISSA.	62	68	14	...	72	6	...	...	6	78
	Bengal—Raniganj	34	35	5	...	40	1	...	...	1	41
	Central Provinces { Chanda Chhindwara Narsinghpur	1 1 1	1 1 1	...	...	1 1 1	...	...	...	...	1 1 1
	TOTAL CENTRAL PROVINCES	3	3	...	...	3	...	...	...	...	3
	Assam { Lakhimpur Naga Hills	13 1	15 1	...	...	15 1	...	...	...	...	15 1
	TOTAL ASSAM	14	16	...	...	16	...	...	...	...	16
	Panjab, Jhelum	2	2	...	...	2	...	...	...	...	2
TOTAL COAL	120	119	19	...	138	7	...	...	7	145	
MANGANESE	Central Provinces { Balaghat Bhandara Chhindwara	4 1 1	4 ...	1 1	...	4 1 1	...	1 ...	...	1 ...	5 1 1
	TOTAL MANGANESE	6	4	2	...	6	...	1	...	1	7
MICA	Bihar and Orissa, Hazaribagh	4	6	2	...	8	1	...	...	1	9
	Rajputana, Ajmer	1	1	...	...	1	...	...	...	...	1
	TOTAL MICA	5	7	2	...	9	1	...	...	1	10
IRON	Bihar and Orissa, Singbhum	1	...	...	...	...	1	...	...	1	1
SALT	Panjab, Jhelum	1	5	...	...	5	...	...	...	...	5
GOLD	Madras, Anantapur	4	3	...	...	3	1	...	...	1	4
WOLFRAM	Burma, Tavoy	10	7	1	...	8	4	...	...	4	12
COPPER	Bihar and Orissa, Singbhum	4	5	...	...	5	1	...	...	1	6
GEMS (RUBIES)	Burma, Mogok	1	1	...	...	1	...	...	...	...	1
GRAND TOTAL (ALL MINERALS)		152	151	24	...	175	15	1	...	16	191

APPENDIX II—concl'd.

Table No. 4.

Statement of fatal accidents in mines regulated by the Indian Mines Act, 1901, during the year 1914, 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 of fire-damp.	Falls of roof.	Falls of side.	In shafts.	Suffocation by gases.	By explosives.	Implosion of water or falling into water.	Heavings.	Miscellaneous below ground.	Surfaces.	Total deaths.	Below ground.	Above ground.	Below and above ground.
Coal	120	1	47	36	18	1	4	2	21	8	7	145	1.66	.14	1.05
Mica	5	...	1	2	...	...	1	5	...	...	1	10	.82	.16	.69
Manganese	6	...	...	2	...	...	2	1	...	...	2	7	.48	.74	.54
Salt	1	...	...	...	...	...	5	...	...	...	...	5	5.42	...	5.20
Gems (Rubies)	1	...	...	...	...	...	1	...	...	...	...	1	1.16	...	.58
Gold	4	...	...	...	2	...	...	...	...	1	1	4	4.95	.70	1.96
Iron	1	...	...	...	...	...	...	...	...	...	1	1	—	7.67	.84
Wolfram	10	...	...	7	...	...	...	...	...	1	4	12	4.31	3.40	3.96
Copper	4	...	...	...	2	...	3	...	...	...	1	6	12.44	.68	3.21
Total 1914	152	1	48	47	22	1	16	8	21	10	17	191	1.45	.26	1.03
Total preceding year.	136	29	41	37	29	1	2	30	16	14	12	311	1.71	.19	1.16
Difference	+16	-28	+7	+10	-7	...	+14	-22	+5	-4	+5	-20	-.26	+7	-.13

APPENDIX III.

PROSECUTIONS UNDER THE MINES ACT.

Statement of prosecutions instituted under the Indian Mines Act, 1901, during the year 1914.

PROVINCE.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	REMARKS.
Bihar and Orissa	Manbhum	1	1	1	Section 20, Rule 3 of Notification No. 11798-103, dated 30th December 1908. Section 20, Rule 19 of Notification No. 864-68-20, dated 10th March 1904. Section 20, Rule 47 of Notification No. 2968-82, dated 21st April 1906.	
	Do.	1	1	1	Section 20, Rule 8 of Notification No. 11798-103, dated 30th December 1908.	
	Gaya	1	1	1	Section 20, Rule 1 of Notification No. 11798-103, dated 30th December 1908.	
	Manbhum	1	1	...	Section 20, Rule 5 of Notification No. 864-68-20, dated 10th March 1904.	Acquitted.
	Do.	1	1	...	Ditto ditto	Do.
	Do.	1	1	...	Ditto ditto	Do.
Central Provinces	Do.	1	1	...	Ditto ditto	Do.
	Balaghat	1	1	1	Section 20, Rules 2, 3 and 5 of Notification No. 6436-162, dated 2nd September 1911.	
Bihar and Orissa	Hazaribagh	1	1	1	Section 20, Rule 1 of Notification No. 11798-103, dated 30th December 1908.	
	Manbhum	1	2	2	Ditto ditto.	
	Do.	1	1	...	Ditto ditto	Absconded.
Bengal	Do.	1	1	...	Ditto ditto	Not tried in 1914.
	Burdwan	1	1	...	Ditto ditto	Withdrawn.
Central Provinces	Nagpur	1	1	1	Section 20, Rules 3, 5 and 12 of Notification No. 6436-162, dated 2nd September 1911.	
	Do.	1	1	1	Ditto ditto.	
Bengal	Bhandara	1	1	1	Section 20, Rules 3, 9 and 12 of Notification No. 6436-162, dated 2nd September 1911.	Acquitted in regard to rule 3.
	Burdwan	1	1	1	Indian Mines Act, 1901, Section 13 (1), and Section 20, Rule 19 of Notification No. 864-68-20, dated 10th March 1904.	
Bihar and Orissa	Hazaribagh	1	2	1	Section 20, Rule 1 of Notification No. 11798-103, dated 30th December 1908.	
Bengal	Burdwan	1	1	1	Indian Mines Act, 1901, Section 13 (1).	
Bihar and Orissa	Hazaribagh	1	9	1	Indian Mines Act, 1901, Sections 16 and 17.	Withdrawn.
	Manbhum	1	1	...	Section 20, Rule 5 of Notification No. 11798-103, dated 30th December 1908.	
	Do.	1	1	1	Ditto ditto.	
Bengal	Do.	1	1	...	Section 20, Rule 19 of Notification No. 864-68-20, dated 10th March 1904.	Acquitted.
	Burdwan	1	1	1	Ditto ditto.	
Bihar and Orissa	Manbhum	1	3	3	Indian Mines Act, 1901, Section 13 (1). Section 20, Rules 4 and 9 of Notification No. 864-68-20, dated 10th March 1904.	

APPENDIX III—concl.d.

PROSECUTIONS UNDER THE MINES ACT—concl.d.

Statement of prosecutions instituted under the Indian Mines Act, 1901, during the year 1914.

PROVINCE.	District.	Number of prosecutions.	Number of persons prosecuted.	Number convicted.	Numbers of rules and sections of the Act contravened.	REMARKS.
Bengal	Burdwan	1	1	1	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908.	
	Do.	1	1	1	Indian Mines Act, 1901, Section 13 (J). Section 20, Rules 1, 4 and 7 of Notification No. 864-68-20, dated 10th March 1904.	
	Do.	1	1	1	Section 20, Rule 19 of Notification No. 864-68-20, dated 10th March 1904.	
	Manbhum	1	4	4	Indian Mines Act, 1901, Section 13 (J).	
	Monghyr	1	2	1	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908.	One accused absconded.
Bihar and Orissa	Hazaribagh	1	1	1	Indian Mines Act, 1901, Section 16. Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908.	
	Manbhum	1	1	1	Indian Mines Act, 1901, Section 13 (J).	
	Hazaribagh	1	1	1	Section 20, Rules 1 and 4 of Notification No. 11793-103, dated 30th December 1908.	
	Manbhum	1	1	1	Section 20, Rule 45 of Notification No. 2968-82, dated 21st April 1906.	
	Do.	1	1	1	Section 20, Rule 1 of Notification No. 11793-103, dated 30th December 1908, and Rule 45 of Notification No. 2968-82, dated 21st April 1906.	
Bengal	Do.	1	2	2	Section 20, Rule 9 of Notification No. 864-68-20, dated 10th March 1904.	
	Burdwan	1	3	3	Section 20, Rules 1, 7 and 19 of Notification No. 864-68-20, dated 10th March 1904.	
Bihar and Orissa	Manbhum	1	3	3	Indian Mines Act, 1901, Section 13 (J). Section 20, Rules 3 and 7 of Notification No. 864-68-20, dated 10th March 1904.	
	Do.	1	1	...	Section 20, Rule 12 of Notification No. 864-68-20, dated 10th March 1904.	Not tried in 1914.
Bengal	Burdwan	1	1	1	Section 20, Rule 6 of Notification No. 864-68-20, dated 10th March 1904.	
	Manbhum	1	1	1	Section 20, Rule 12 of Notification No. 864-68-20, dated 10th March 1904.	
Bihar and Orissa	Do.	1	2	...	Section 20, Rules 2 (g), 7 and 8 of Notification No. 864-68-20, dated 10th March 1904.	Not tried in 1914.
	Do.	1	1	...	Section 20, Rule 12 of Notification No. 864-68-20, dated 10th March 1904.	Do.
Bengal	Burdwan	1	1	...	Section 20, Rule 19 of Notification No. 864-68-20, dated 10th March 1904. Section 20, Rule 8 of Notification No. 11793-103, dated 30th December 1908.	Do.

APPENDIX IV.
MISCELLANEOUS.

Statement No. 1.

List of Inspection Circles.

No. 1 Circle.	No. 2 Circle.	No. 3 Circle.
(a) All mines in the district of Manbhum, which are situated west of a line drawn from Adra Junction at mile 175 of the Bengal-Nagpur Railway to Gobindpur at mile 169 on the Grand Trunk Road and continued across the district in each direction, and all mines in the district of Palaman.	(a) All mines in the districts of Burdwan and Bankura to the west of a line drawn from mile 131 on the East Indian Railway main line near Asansol to mile 141 on the Ondal loop near Gaurangdi, and continued across the districts in each direction; and all mines in the district of Manbhum east of a line drawn from Adra Junction at mile 175 on the Bengal-Nagpur Railway to Gobindpur at mile 169 on the Grand Trunk Road, and continued across the district in each direction, and all mines in the districts of Hazaribagh, Gaya, Monghyr, Darjeeling and Ranchi.	(a) All mines in the districts of Burdwan and Bankura to the east of a line drawn from mile 131 on the East Indian Railway main line near Asansol to mile 141 on the Ondal loop near Gaurangdi, and continued across the districts in each direction, and all mines in the districts of the Sonthal Parganas, Birbhum, Singhbhum and Sambalpur.
(b) All mines in Assam	(b) All mines in Baluchistan	(b) All mines in the Presidency of Bombay.
(c) All mines in Burma	(c) All mines in the United Provinces	(c) All mines in the Central Provinces.
	(d) All mines in the Panjab	(d) All mines in the Presidency of Madras.
	(e) All mines in Ajmer-Merwara.	

Statement No. 2.

List of holders of certificates as managers of coal mines in British India.

(a) Certificates granted to holders of English certificates of competency.

FIRST CLASS.

NAME.	No. of Indian certificate.	Date of Indian certificate.	No. of English certificate.	Date of English certificate.
Turnbull, John James	180	26th January 1914	3929	8th September 1911.
Mark, William Stewart	181	Ditto	3066	14th June 1907.
Harrison, Joseph Richard	182	Ditto	3985	13th March 1912.
Le Mesurier, George James Brooke	183	16th February 1914	56	30th July 1913.
Fisher, Frank Horace	184	Ditto	3517	4th January 1910.
Aroher, Clement John	185	16th July 1914	39	30th July 1913.
Oarr, William	186	Ditto	7	30th January 1913.
James, Edmund David	187	Ditto	4138	28th June 1912.
Shaw, John William	188	Ditto	3335	24th February 1909.
Murray, James	189	Ditto	3284	22nd December 1908.

SECOND CLASS.

Barron, George William	20	28th March 1914	7506	21st July 1910.
Owen, Robert	21	16th July 1914	7162	8rd September 1909.

APPENDIX IV—*contd.*

MISCELLANEOUS.

Statement No. 2—*concl.*List of holders of certificates as managers of coal mines in British India—*concl.*

(b) Certificates of Competency.

FIRST CLASS.

NAME.	No. of certificate.	Date of certificate.	REMARKS.
Kowar, Surendra Nath	70	28th March 1914.	
Robertson, Andrew	71	Ditto.	
Banerji, Gobinda Chandra	72	Ditto.	
Mukherji, Mohini Mohan	73	Ditto.	
Vanderbeck, Percy William	74	Ditto.	
Dutt, Fanindra Krishna	75	Ditto.	
Chatterji, Sudhir Mohan	76	Ditto.	
Allen, Albert Edward	77	Ditto.	

SECOND CLASS.

Barrowman, Alexander	90	28th March 1914.	
Ashcroft, Frederick Joshua	91	Ditto.	
Banerji, Sambhu Nath	92	Ditto.	
Ghosh, Hrishikesh	93	Ditto.	
Roy, Harish Chandra	94	Ditto.	
Bagchi, Beni Madhab	95	Ditto.	
Sen, Sarat Chandra	96	Ditto.	
Banerji, Bejoy Krishna	97	Ditto.	
Das, Debendra Nath	98	Ditto.	
Sahai, Kasi Nath	99	Ditto.	
Sur, Aswini Kumar	100	Ditto.	
Benbow, Peroival Sydney	101	Ditto.	
Banerji, Jadu Gopal	102	Ditto.	
Hunter, Roger Joseph	103	Ditto.	
Ghatak, Tara Sankar	104	Ditto.	
Carapiet, Gregory George	105	Ditto.	
Bhattacharji, Tara Pada	106	Ditto.	
Sen Gupta, Jitendra Chandra	107	Ditto.	
Mukherji, Dinesh Chandra	108	Ditto.	
Rao, Harish Chandra	109	Ditto.	

(c) Certificate of Service.

FIRST CLASS.

Chatterji, Kali Das	137	26th March 1914.	
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SECOND CLASS.

Rowasankar, Tribhuban Dass	189	26th January 1914.	
Mukherji, Niranjan	190	18th July 1914.	

APPENDIX IV—contd.

MISCELLANEOUS.

Statement No. 3.

List of Universities and Colleges in England and India approved by the Governor-General in Council for the purposes of Rules 32 and 33 under the Indian Mines Act, 1901.

Name of Institution and Degree or Diploma.	Date.
University of Birmingham in respect of its Degree of B.Sc. in Mining and Diploma in Mining.	11th June 1904.
University College of Bristol in respect of its Senior Diploma in Mining.	16th September 1904.
University of Cambridge in respect of its Diploma in Mining Engineering.	6th June 1905.
University of Durham in respect of its Degree of B.Sc. in Mining	21st December 1903.
Durham College of Science in respect of its Diploma in Mining .	29th June 1904.
University of Glasgow in respect of its Degree and Diploma in Mining.	25th September 1904.
Glasgow and West of Scotland Technical College in respect of its Diploma in Mining.	23th June 1904.
University of Leeds in respect of its Degree of B.Sc. in Mining and Diploma in Mining.	21st November 1904.
University of London in respect of its B.Sc. Degree in Mining for Internal Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a mine.	9th June 1905.
University of London in respect of its B.Sc. Degree in Mining for External Students, subject to the Degree being endorsed by the University with a certificate of four months' practical experience in a Mine.	7th August 1906.
Royal School of Mines in respect of its Associateship in Mining .	24th March 1904.
University of Oxford in respect of its Diploma B. for Colliery Engineers (in Scientific Engineering and Mining subjects).	11th February 1905.
University College of Sheffield in respect of its Diploma in Mining.	15th July 1904.
University College of South Wales and Monmouthshire in respect of its Diploma in Mining.	19th April 1904.
Wigan Mining and Technical College in respect of its Diploma in Mining.	26th August 1904.
Civil Engineering College, Sibpur, in respect of its Diploma in Mining.	22nd February 1907.
Merchant Venturers' Technical College, Bristol, in respect of its Diploma in Mining Engineering.	5th October 1905.
Victoria University of Manchester in respect of its Degree and Certificate of Mining.	14th February 1906
University College of Nottingham in respect of its Diploma in Mining Engineering.	23th March 1906.
University of Sheffield in respect of its Degree of Bachelor of Engineering (Mining).	30th June 1906.
Heriot-Watt College in respect of its Certificate in Mining Engineering.	16th January 1908.
Calcutta University in respect of its Degree of Bachelor of Engineering in the branch of Mining Engineering.	24th September 1910.
Harvard University, Cambridge, Massachusetts, in respect of its Diploma in Mining Engineering.	22nd February 1913.

APPENDIX IV—*contd.*

MISCELLANEOUS.

Statement No. 4.

SIBPUR COLLEGE.

THE MINING CLASSES.

CIRCULAR.

(All students must be resident).

A course for the Diploma in the "Principles of Mining" is offered.

Arrangement of Classes.

First year.—Admissions about the end of January to the preliminary year, in which Mechanical, Electrical and Mining students are taught together.

Second year.—Promotion in April to the Junior Mining Class. Civil Engineering students who pass the Sub-Overseer examination are also admitted at this stage.

Third year.—Promotion in April to the Senior Mining Class. The examination for the Diploma in Mining is held at the end of this year.

(The possession of a certificate gives the holder no claim to any appointment under Government.)

The Mining Course.—This course covers three years (all at the College), preparing students for the examination for the Government Diploma in the "Principles of Mining". The first or preliminary year is common to the course in Mechanical and Electrical Engineering. Specialized instruction in Mining is offered only in the last two years. Students spend six weeks each year in learning practical Mine Surveying and in visiting collieries.

The courses of instruction are designed to afford theoretical training in the Principles of Mining generally to prepare students for positions of responsibility in coal or metal mines, and in the case of students attending for instruction in coal-mining, to qualify them to appear at the examinations for mine managers as required by the Indian Mines Act. Students who obtain the College Diploma may be granted a reduction by two years in the qualifying period of practical work in a coal-mine required of candidates for a colliery manager's certificate.

Admission to the Mechanical and Electrical Engineering and Mining Courses.—Admission to the first or preliminary year of the Mechanical and Electrical Engineering and Mining Courses is made on the third Monday in January. Candidates must be qualified, as laid down above, for admission to the first year of the Sub-Overseer classes (B. Final certificate-holders are admitted only to the first or preliminary year of the Mechanical and Electrical and Mining Courses).

Applications must be received at the Principal's office by the first day in January.

Admission to advanced standing.—Students who have passed the Sub-Overseer Examination may be admitted in April to the junior year of the Mining or the Mechanical and Electrical Engineering Courses, thus qualifying for admission to the final examination in those branches on the expiry of two years.

Age.—No limits of age are laid down for admission to the Mining and Mechanical and Electrical Engineering Courses.

Admission of special students to the Mining classes.—Provided there is room, persons who have completed at least two years' practical work upon a mine may be admitted direct to the junior year of the Mining Course as special students, irrespective of age, provided that their general education is such as to enable them to follow the course with profit. They must apply for admission before 1st March, producing statements from the managers under whom they have served, showing the nature of their employment and period.

Two places in the Mechanical and Electrical Engineering and two places in the Mining Courses are reserved for students from Bihar and Orissa.

The total number of admissions to the above courses in Civil and Mechanical and Electrical Engineering and Mining is limited to 80; preference is given to admissions to the junior years of the Upper Subordinate, the Mechanical and Electrical Engineering and Mining Courses and to the second year of the Sub-Overseer Courses. The number admitted to the Civil and Mechanical and Electrical and Mining Branches is regulated by the Principal, so that the total number in any combined class does not exceed 60, nor in any special branch shall it exceed 40.

In determining the age of candidates for admission, for Indian students the age statement, as given on the Matriculation or B. Final certificates, is the only evidence accepted. European students must produce their baptismal certificates.

APPENDIX IV—*contd.*

MISCELLANEOUS.

Statement No. 4—*contd.*

MEDICAL EXAMINATION.

Every applicant must before admission present himself before the Medical Officer resident at the College for examination as to his eyesight, physical strength and fitness for manual labour. In the case of those resident at a distance, a Civil Surgeon's certificate will be accepted. Candidates not protected by vaccination must be vaccinated before admission.

COMMENCEMENT OF SESSION.

The second-year Sub-Overseer and the junior-year sessions of all courses commence in April as soon as possible after the B. Final or Sub-Overseer Examination results are announced.

The first-year session commences on the first Monday in May.

Any student unable to join the College on the date mentioned in his admission letter must send by that date Rs. 9 of the first instalment of fees in order to secure his seat; failing this, another student will be admitted in his place. He must also bring with him, when he joins, a medical certificate from a Civil or Assistant Surgeon testifying his inability to join on the proper date, failing which he will be liable to a fine of Rs. 10.

VACATION.

The College will be closed for the long vacation from about the middle of August to the first Monday in November. No student may remain at the College during this period, except such as may be detained on duty by the Principal.

Residential arrangements.

All students must be resident.

There are separate furnished barrack accommodation and necessary arrangements for Europeans, Muhammadans and Hindus.

In the case of Muhammadans, on account of the greater cost of living at the College owing to the small number of Muhammadan students, Government maintain a cook and one other servant, and pay a stipend to each Muhammadan student varying from Rs. 6 to Rs. 1 a month according as there may be one or sixteen resident Muhammadans.

COLLEGE DUES.

Initial—

	Rs.	
Entrance fee, mess	2	} Non-returnable.
Entrance fee, athletic club	1	
Caution-money deposit	5	} Balance returnable if applied for within three years after paying College dues.

Monthly—

Tuition	8	Payable for each month of the year.
Electric light	1	Payable for ten months of the year.
Board (session) 9½ months . . . . .	...	Europeans, Rs. 25; Hindus, Rs. 11.
" (vacation) 2½ " . . . . .	...	Europeans, Rs. 6; Hindus, Rs. 2-8.
Athletic club	1	in March, June and November.

Free studentships.—A total number of five free studentships for all branches in the Apprentice Department are available for European students.

Reduced feeships.—A total number of 25 reduced feeships for all branches of the Apprentice Department are available for Europeans. These reduce the fees to Rs. 5 for messing payable for 12 months in addition to the electric light and athletic club fees.

A total number of 40 reduced feeships are available for Indians. These reduce the fees to Rs. 2 for messing, payable for twelve months in addition to the electric light and athletic club fees.

Note.—Free and reduced feeships apply only to students whose parents or guardians reside within the limits of the jurisdiction of the Governor of Bengal, but the sons of employes of the East India Railway, Bengal-Nagpur Railway or Eastern Bengal State Railway, of soldiers serving in India, of Survey, Telegraph and other Government officers who are liable to employment in Bengal, or pensioners who, when on active service, were liable to be an employe, are eligible for election.

Forms of application for the reduced feeships are available in the Principal's office.

These free and reduced feeships are awarded by the Board of Visitors after the commencement of the session from among students who have joined.

APPENDIX IV—*contd.*

MISCELLANEOUS.

Statement No. 4—*contd.*

SCHOLARSHIPS AND STIPENDS.

MINING COURSE (JUNIOR AND SENIOR YEARS)—

Ba.

Two scholarships of	12	} carrying exemption from tuition fee unless the holder is also on the reduced fee or free list for candidates trained at Sibpur or at other schools in Bengal.
Three „ of	6	

SYLLABUS OF MINING COURSES.

COURSE I.

Geology applied to mining.—(One lecture per week).

Classification of rocks : characteristic fossils and economic products of the principal systems.

Structure of rock ; foldings, faults, cleavage, formation of mineral veins.

Principles of geological surveying : methods employed in constructing geological maps and sections. Special reference to the geology of India.

Mining Engineering.—(Two lectures per week).

Boring by hand and power machines.

Sinking and lining shafts ; various methods employed in special cases.

Systems of haulage, underground and aboveground, aerial ropeways.

Hoisting, head-gear, ropes, safety appliances.

Mining legislation.

Section A.—(One lecture per week).

Methods of working coal, shafts, pillars, preliminary work, and various methods of working the seams. Special reference to thick coal working as practised in England and different parts of the world.

Shot-firing ; coal-cutting by machinery.

Surface subsidence and under-sea working.

Timbering and other supports.

Coal mine plans and sections, connecting surface and underground surveys.

Section B.—(One lecture per week.)

Prospecting for and methods of working mineral veins.

Alluvial mining and open workings.

Hydraulic mining ; dredging for gold ; ore-beds and deep leads, overhand and underhand stopping.

Hand and power drilling ; blasting, timbering.

Metal mine plans.

COURSE II.

Descriptive Mineralogy.—(One lecture per week).

Physical properties of minerals ; description of various ores and fuels ; methods of determination.

Prospecting operations.

Mining Engineering.—(Two lectures per week during first-half of session).

Drainage of mines ; adits, levels ; pumping machinery ; dams ; boring against old workings.

Ventilation of mines ; natural and artificial ventilation ; splitting and regulating air-currents ; types of fans ; water-gauge and anemometer.

Power-application in a mine ; discussion of relative merits of steam, water, compressed air, electricity and oil, as sources of applied power.

APPENDIX IV—contd.

MISCELLANEOUS.

Statement No. 4—concl'd.

Section A.—(One lecture per week).

Description of gases found in coal mines; colliery explosions; safety lamps; instruments for detecting fire-damp; treatment of men overcome by foul air.

Arrangement of surface works at a colliery; sorting and screening coals; coal-washing, briquette making, coking and bye-products.

Section B.—(One lecture per week).

Surface works of metal mines, sorting, crushing, sizing and concentration of various ores. Modern ore-dressing machinery and slime tables.

Special reference to treatment of gold, silver, copper, lead and zinc.

Cyanide and Chlorine treatment of slimes.

Statement No. 5.

MINING INSTRUCTION IN BENGAL AND BIHAR AND ORISSA.

[*The Mining Educational Advisory Board desire that Colliery Managers will kindly publish this information in their collieries. An appeal is also made to them to support the lectures by seeing that members of their colliery staff who are suitable take advantage of the lectures and attend them regularly.*]

RANIGANJ AND JHARIA COAL-FIELDS.

Lectures will be delivered throughout the session at the following centres:—

<i>Place and time.</i>	<i>Lecturer.</i>
(1) Lecture-room near Sijua station, on Tuesdays at 5-30 P.M.	Mr. J. R. Harrison.
(2) Lecture-room near the Jharia Club, on Mondays at 5-30 P.M.	„ E. D. James.
(3) Lecture-room at Messrs. Apcar and Company's Charanpur Colliery, on Wednesdays at 5-30 P.M.	„ T. Gibson.
(4) Lecture-room near Dishargarh Club, on Mondays at 5-30 P.M.	„ W. R. Lascelles.
(5) Railway Institute, Raniganj, on Saturdays at 5-30 P.M.	„ J. Wilson, B.Sc.

The course of instruction, consisting of not less than 25 lectures, will commence the last week in October and end in the following May. An examination will be held on the first Monday in June 1915, and candidates who pass the examination will receive a certificate recording their success. No candidate will, however, be permitted to sit for the examination unless he has attended 50 per cent. of the lectures and received 40 per cent. of the marks allotted for home work.

All Europeans and English-speaking Indians are cordially invited to attend.

The following Sub-Committees have been appointed for each centre:—

RANIGANJ DISTRICT.

<i>Dishargarh Centre.</i>	<i>Charanpur Centre.</i>	<i>Raniganj Centre.</i>
Mr. G. C. Leach, <i>Chairman.</i>	Mr. C. J. E. David, <i>Chairman.</i>	Mr. C. J. E. David, <i>Chairman.</i>
„ Glen George.	„ T. Samson.	„ P. S. Keelan.
„ J. Mackintosh.	„ R. Mitchell.	„ H. Piggford.
„ Geo. Millar.	„ E. M. Patterson.	„ W. J. Rees.
„ F. Owen.	„ A. Russell.	Babu Promotho Nath Hazra.
Babu M. N. Ray (Begunia).	Babu Atul Sasi Mitra.	„ Bejoy Krishna Banerji.
„ H. P. Mukherji (Chota Dhemo).	The Local Lecturer,	The Local Lecturer,
„ P. C. Tarafdar.	<i>Secretary.</i>	<i>Secretary.</i>
The Local Lecturer, <i>Secretary.</i>		

APPENDIX IV—*contd.*

MISCELLANEOUS.

Statement No. 5—*contd.*

JHARIA DISTRICT.

Jharia Centre.

The Chief Inspector of Mines,
Chairman.

Mr. T. Adamson.
" R. G. M. Bathgate.
" R. J. Browne.
" A. S. Thomson.
Babu Bhupati Mukherji.
Sita Nath Dutta.
The Local Lecturer,
Secretary.

Sijua Centre.

Mr. R. R. Simpson,
Chairman.

" A. Agabeg.
" E. S. Bennertz.
" J. S. Kean.
Babu Moti Lal Raba,
The Local Lecturer,
Secretary.

SYLLABUS OF THE COURSE OF INSTRUCTION.

The course will treat principally of the more practical operations in actual mining, with special reference to India, and the principles underlying such operations will be thoroughly discussed. Special attention will be paid to the various methods of working thick seams. Sketches illustrating the lectures will be distributed free of charge.

At the close of each lecture questions will be set for home work.

FIRST-YEAR COURSE.

1. *Geology.*—General structure of the crust of the earth; descriptions of faults, dykes, outcrop, dip, strike, unconformity, etc.; composition and properties of coal; special reference to the coal measures in India; importance of recording results of observations.
2. *Exploration.*—Advantages of borings; driving through faults, washouts, dykes, methods of maintaining the direction and gradient of such drivages.
3. *Boring and winning.*—Different systems of boring; choice of methods; cost of boring; winning coal by inclines, adits, shafts and cross-cuts.
4. *Sinking.*—Site of colliery; position of shafts, excavation and shape; blasting with use of safety fuse and electric battery; explosives and detonators, their safe storing and handling; sinking and how to deal with difficulties; apparatus and tools used; lining shafts and scaffolding; pitbanking arrangements.
5. *Opening out and methods of working, surveying.*—Shafts; pillars; arching or supporting the pit bottom; quarrying; pillar and stall; double road stall; long wall; panel systems.
6. *Timbering and supporting.*—Fixing of props and double timber, chocks or cogs; special methods of timbering to withstand pressure from the roof, sides and floor; securing dangerous holes in the roof due to heavy falls; use of iron or steel girders; stowing and packing; arching.
7. *Gases met with in coal mines.*—Their experimental preparation by chemicals, and illustration of their physical and physiological properties; methods of detecting; explosion and gob fires.
8. *Ventilation.*—Natural and artificial methods; coursing the air; use of stoppings, brattices, doors, air bridges, regulators; measuring the quantity of air, use of thermometer, barometer; water-gauge, anemometer; the friction of air in mines and the elementary theory of splitting.
9. *Safety lamps.*—Theory of safety lamps, Sir Humphrey Davy's experiment; the Davy lamp, the Clanny and Thomas and Williams lamps, the Marsaut and Mueseler lamps; fire-damp detectors.

SECOND-YEAR COURSE.

1. *Mechanical Engineering of collieries.*—Winding engines, discussion of the different types, calculation of the dimensions of cylinders, length of stroke, diameter of drum, etc.; strength of winding ropes and chains, detaching hooks, capping winding ropes, care and examination of ropes.

APPENDIX IV—*contd.*

MISCELLANEOUS.

Statement No. 5—*concl'd.*SECOND-YEAR COURSE—*concl'd.*

2. *Pumping.*—Importance of a good system ; measurement of quantities of water ; lifting and forcing pumps ; pumps for sinking ; temporary and permanent pumps ; calculation of dimensions of pumps to perform a given duty, strength of pipes, methods of supporting ; different types of joints.

3. *Hauling.*—Tramways, tubs and waggons ; conveyance by self-acting inclines ; single-rope haulage ; main and tail ; endless rope ; endless chain ; calculations concerning inclines, sizes of haulage engines, ropes, etc. ; signalling ; capping of haulage ropes.

4. *Methods of working and ventilation.*—Revision of first-year course work, followed by a fuller treatment of these subjects.

5. *Surface arrangements.*—Boilers ; Cornish, Lancashire, and water-tube types ; boiler fittings, injectors, and steam-pipes, etc. ; boiler explosions, incrustation, corrosion and priming ; calculations of boilers. Heap-steads ; arrangement of roads around pit bank ; simple screening and sizing.

6. *Transmission of power.*—By steam, compressed air, and electricity, discussing the relative merits of each system.

Text-books recommended.—Peel's or Kerr's Elementary Mining ; O'Donoghue's Mining Arithmetic.

W. H. EVERETT,

(*Off. Supt. of Industries, etc.*),

Secretary to the Mining Educational Advisory Board,
Writers' Buildings, Calcutta.

Statement No. 6.

No. 8818—1.

DEPARTMENT OF COMMERCE AND INDUSTRY.

NOTIFICATION.

GEOLOGY AND MINERALS.

Simla, the 5th September 1914.

In exercise of the power conferred by Section 20 of the Indian Mines Act, 1901 (VIII of 1901), the Governor-General in Council is pleased to direct that in the rules regarding certificates of mine managers issued with Notification No. 2968-82 (Geology and Minerals), dated the 21st April 1906, the following amendments shall be made, namely:—

Rules 36 and 37 and the words "Notwithstanding anything in rule 36 or 37" in rule 38 shall be cancelled.

R. E. ENTHOVEN,

Secretary to the Government of India.

No. 8814—8830—1.

A copy is forwarded to all Local Governments and Administrations except the Chief Commissioner of Delhi.

A copy is also forwarded to Railway Department,
Director, Geological Survey of India,
Chief Inspector of Mines in India,
Mining Association.

By order, etc.,

S. H. SLATER,

Under-Secretary to the Government of India.

APPENDIX IV—*concl'd.*
MISCELLANEOUS.

Statement No. 7.

LAND ACQUISITION (MINES) ACT, 1885.

Particulars required to be furnished by colliery owners to Local Governments when giving notice under Section IV of the Land Acquisition (Mines) Act, 1885, of their intention to work coal under land acquired for a railway—

- (a) The name, residence and profession of the person giving the notice.
- (b) The name of the mine, together with that of the village and district in which the mine is situate.
- (c) The name of the railway line or of the siding and the main line to which the siding is attached, under which the mine is situate.
- (d) The names of the railway stations and the mileage between which the said siding or the said portion of the railway land, under which the mine is situate, falls.
- (e) The number and date of the declaration under which the land was acquired.
- (f) A tracing, showing the boundaries of, and the area over which, the acquired land extends.

CALCUTTA
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