

DEATH IN SOUTH AFRICAN MINES

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THIRTY-SIX thousand¹ men have been killed in accidents on the gold mines since the beginning of the century. Untold others have died from septicaemia and other diseases contracted as a result of accidental injury. Many more have lost limbs or eyes, or have been otherwise disabled.

The annual death toll from accidents on South African mines fluctuates around 800. The figure for 1960 was close to 1,400 because of the Coalbrook disaster of January 21. In Britain the number of deaths from mining accidents seldom exceeds 200 a year.

In 1956, the last year for which we have detailed figures, 816² miners were killed in accidents and the accident death rate was 1.56 per 1,000 workers. In 1910 the rate was 4.40 for black and 3.49 for white workers.³ But the incidence of accidents increased from 30 per 1,000 workers in 1927⁴, when the existing definition of accidents was first adopted, to 58.7⁵ in 1956.

The decrease in the accident death rate must therefore be attributed to improved first aid and medical treatment rather than to preventive measures. An accident is not a fortuitous, unavoidable event. It is, broadly, the result of defective adaptation to or control of environment, and could have been averted by the adoption of adequate care or technical and material safeguards. The high and increasing incidence of mining accidents points to deficiencies in management.

A contributory factor has been the penetration to greater depths, which now exceed 9,000 feet in the deepest gold mines. Temperature, humidity, and pressures are greatest, ventilation systems least effective, and rock bursts most frequent, at such depths. Deaths from heat strokes increase, miners tire more

¹Chamber of Mines An. Reports.

²1958, U.G. 15 Rep. of Govt. Min. Eng. for 1956 pp. 69-70.

³1911, Tvl. Mines Dept. An. Rep. Govt. Min. Eng. for 1910, p. 114.

⁴1928, U.G. 34 An. Rep. Govt. Min. Eng. for 1927, p. 47.

⁵*ibid.*, p. 76.

quickly, and accidents due to fatigue tend to multiply. But these consequences are not inevitable. The fault lies in the failure to ensure that the quality of safety work keeps pace with the degree of risk involved.

Relative neglect often occurs also in shaft sinking and development, usually the most hazardous stages in mining. Partly for this reason the Orange Free State gold mines have an annual accident death rate of 3 to 4 per 1,000 workers,⁶ which is similar to the incidence on the Witwatersrand 50 years ago.

If the number of accidents varied strictly with the natural hazards of mining operations, one would expect the incidence on coal mines to be lower than on gold mines. Coal is mined to only about one-tenth the depth of gold mines, and access is by inclined shafts through which the men walk; the necessity of lowering by cages is obviated, and accidents from overwind do not occur. Yet the death rate from accidents on coal mines is not lower than that on gold mines. The respective rates in 1956 were 1.68 and 1.69 per 1,000 workers.⁷ The chief cause of accidents in coal mines is from trucks and tramways; falls of rock and gas explosions cause most of the deaths.

Accidents and Deaths on the Transvaal Gold Mines

Nature of Accident	1907-8				1956			
	Accidents No.	%	Deaths No.	%	Accidents No.	%	Deaths No.	%
Falls of Ground ...	303	22.6	192	25.6	4,808	21.02	271	41.31
Falls of Material ...	186	11.2	58	7.7	3,860	16.87	44	6.71
Falls in Shafts, Excavations, etc. ...	113	6.4	67	9.0	202	0.88	42	6.40
Trucks and Trams ...	151	8.3	26	3.5	5,291	23.13	102	15.55
Other Machinery ...	108	6.0	24	3.2	350	1.53	12	1.83
Explosives ...	271	25.0	237	31.6	206	0.9	46	7.01
Movements of Cages Power, Fire, Water ...	202	12.2	123	16.4	249	1.09	76	11.59
Other ...	141	8.3	22	2.9	7,910	34.58	63	9.60
	1,475	100.0	749	100.0	22,876	100.00	656	100.0

The table does not disclose the nature of the human factors involved. The most important ones are: the employment of inexperienced and untrained men on dangerous operations; the colour bar; inadequate supervision; speed-up; and low compensation rates for deaths and injuries.

⁶An. Reports of Govt. Min. Eng.

⁷1958, U.G. 15 Rep. of Govt. Min. Eng. for 1956, p. 69.

Untrained Miners

The employment of inexperienced miners was at one time a major cause of accidents. How, asked Mr. Fergusson, the Boksburg Inspector of Mines in 1911, could farmers, butchers, bakers, hairdressers and persons generally unsuccessful in their occupations, "be expected to understand the ordinary ground in the mine, much less where faulting and slips are met with"?⁸ The Mining Regulations Commission reported in 1910 that mine managements made extensive use of unskilled whites, "often entirely ignorant of mining, and whose principal and often only recommendation is their physical fitness and their suitability for rough work".⁹

Untrained whites, after working a few months underground, were required to supervise gangs of Africans. Unstable, not doing the actual work performed by Africans, the white miner had often little knowledge of the mine on which he worked and still less of the African committed to his charge. Not surprisingly, the high accident rate was attributed largely to his "carelessness and lack of knowledge".

Harsher things were said about the black miners. Typical of the comments that appeared in the early reports of the Government Mining Engineers was the assertion that though they were "docile and quick to learn certain simple classes of work, their brain capacity does not enable them to understand the reason of things, or to realize the danger resulting from disobedience to orders, or from the many complex conditions of work underground".

The myth of an innate racial deficiency in the black man served to hide the real problem and the actual culprit. It was certainly not the illiterate peasant, inexperienced in industrial and mechanical arts, and unable to understand orders given in English or pidgin 'Fanakalo'. The responsibility lay with mine owners and managers who sent the Africans underground, perhaps on the same day as they arrived after a long exhausting journey, and without training or instruction.

The Republican Government wanted instruction to be given. In 1896, when the accident death rate was five per 1,000 workers, a regulation was enacted that read:

"Where any workers, especially persons of colour, are unable to read the regulations, the person in charge of them

⁸1912, U.G. 49 Rep. of Min. Eng. for 1911, p. 110.

⁹Final Rep. Mining Reg. Com. 1907/10, pp. 230-4.

shall see that such workers are made acquainted with the regulations concerning them or appertaining to their particular occupation and duty."¹⁰

The Chamber of Mines objected to the clause and in particular to the words "especially persons of colour" on the ground that "it would be simply impossible for the managers to carry them out".¹¹ Mine owners did not want to be under compulsion to provide instruction; but, if compulsion was to be applied, they wanted to limit the instruction to whites.

It was an uneconomic policy as well as an inhumane one. By keeping the African ignorant, mine owners not only sent up the accident rate but also strengthened the white miners' claim to a monopoly of the occupations conventionally assigned to them. Competency and colour came to be inextricably associated.

Competency or Colour

Formal instruction, when provided, was limited to whites, originally by way of apprenticeship and classes in drilling, and later at evening courses in mining techniques organised by the Transvaal University College. From these efforts emerged the Government Mining Training School which was opened in 1911 at Wolluter.

Coloured and Africans had to learn on the job. Some of them achieved an adequate standard of efficiency in skilled operations. When the Volksraad, at the request of white workers, amended the mining regulations in 1896 to prohibit "persons of colour from holding an engine-driver's certificate of competency",¹² the Chamber of Mines objected "on the ground that many persons of colour are competent engine-drivers".¹³

The unsuccessful strike of the white miners at New Kleinfontein in 1907 showed that Africans could work the mines under greatly reduced supervision, and drove home the realization that white artisans were losing their initial lead derived from wider cultural experience and technical superiority. The Mining Industry Commission in 1907-8, anxious to protect the white's monopoly of skilled work, issued a warning: "The theory that the Native is a 'mere muscular machine' must be discarded", it concluded. "Experience has shown that he can

¹⁰Law 12 of 1896, cl. 146.

¹¹8th An. Rep. 1896, p. 64.

¹²Law 12 of 1896, cl. 106.

¹³8th An. Rep. 1896, p. 63.

no longer be looked upon as debarred by lack of brain and industrial training from interfering with the white man's opportunities of employment and as merely an aid to enable the white man to earn wages sufficient to keep him in contentment".¹⁴

As Africans gained experience in the mines, whites looked to a statutory colour bar for security. The British administration in the Transvaal extended the discriminations introduced by the Republican Government, and Smuts made a further addition in regulations issued under the Mines and Works Act of 1911.

Brown and black workers were excluded from skilled work by three sets of provisions. In the Transvaal and Orange Free State, they could not obtain or use the certificates of competency that are required for the performance of various specified operations. Secondly, only white persons were permitted to hold the positions of shiftmen, gangers, banks men and onsetters, or to blast, lock and unlock lamps underground, attend boilers, and operate electric machines in a fiery mine. Thirdly, certain kinds of work, such as removing props in a colliery, could be carried out only under white supervision.

The regulations were based on a draft prepared by the Mining Regulations Commission of 1907. The only explanation it gave of the colour bar was the bald assertion that "wherever the safety of life and limb is concerned, only competent white persons should be employed".¹⁵ Fifteen years later the Mining Regulations Commission of 1925, appointed to re-establish the colour bar, argued that "not even the most exceptional" Africans were endowed with "a regard for safety, a sense of responsibility, and a capacity to exercise control over others".¹⁶

Such reasoning is of the *post hoc, propter hoc* variety. Comparison with the work done by Africans in the copper mines of Katanga or in South African collieries would show the falsity of the assertion.

The ratio of white to black miners is as one to 26 in Natal collieries, to 13 in Transvaal collieries, and to 8 in the gold mines. Since the work of the white coal miner is limited to supervision, blasting and examination, his hours are staggered so as to give him a shorter working week than the African's. When white gold miners wanted to follow suit, they were told that a redundancy in the amount of supervisors would either increase

¹⁴Mining Industry Commission 1907/8, p. 33 of Report.

¹⁵Final Rep. Min. Reg. Com. 1907/10, p. 249.

¹⁶1936 U.G. 25 Rep. of Min. Reg. Com. paras 28, 118.

the accident potential or throw doubt on the value of their work.

Africans in coal mines do the actual work of cutting, loading, hauling and raising the coal. In addition to lashing and tramping, they operate complicated pneumatic or electric cutters with a high level of precision and speed. "It would be an eye-opener to those persons who contend that driving a tram is skilled work", wrote the Government Mining Engineer in 1920, "to see comparatively raw Natives operating the heavy and rather complicated cutters". For this work they were paid £3 a month, and the 'boss boys' who trained them, £4 10s.¹⁷

Supervision

In gold and coal mines, the white miner is essentially a supervisor and instructor. His role is made necessary and guaranteed by the enormous turnover of African workers under the migrant labour system. There are always 'raw' men from the tribal areas who have to be initiated into the simplest mining processes.

So far from the colour bar being a safety device, it tends to bring about a low standard of accident prevention. The rigid and unrealistic separation between supervisory and manual processes makes for carelessness and inefficiency.

Africans, who do the work, are not properly trained to understand the purpose of rules and procedures. Many with long service become highly skilled, and can teach the white miner much, but have little incentive to show a sense of responsibility.

In contrast to early attitudes, many mine managers are now alive to the value of training new African workers to understand orders, safety precautions, the requirements of personal hygiene, and how to work safely underground before they go underground. A three or four day course of practical instruction is usually given in a model mine built on the surface. Experienced men may receive advanced training, and those who pass aptitude tests are specially trained for the supervisory post of 'boss boy'. Training in work reserved for whites is not, however, given to Africans, though many are often called on to carry out these functions.

Whites receive training but do none of the actual manual work. The division of function blunts the incentive to become efficient and tends to cultivate an indifference in managements and white miners to the African's safety. Prejudice, differences

¹⁷1921 U.G. 40 Rep. of Govt. Min. Eng., p. 114.

of culture and inequality of status discourage the growth of sympathy. White miners are not fellow workers of the blacks, but their superiors. The whites are inclined to ignore the African's individuality and to regard 'their boys' as an amorphous, changing and easily replaceable mass of labour power.

Mr. Fergusson, the exceptionally outspoken Inspector of Mines for Boksburg, made a revealing comparison between the division of labour on the gold mines and in English mines. Mining was something of a hereditary occupation in England, where a miner's son would help his father by doing work of a kind allocated to Africans on the Rand. The English miner took great care to secure and make safe the places where a lad was set to work, and at the same time to point out dangers to him. But in the gold mines, "the death of a Native is not looked upon by miners here as a very serious affair".

Fergusson also contrasted the serious view taken by mine managements of assaults on Africans with their indifference to accidents.

"It is well known to the directors that hundreds of men lose their lives annually through carelessness on the part of the miners and apathy on the part of the officials, and yet, speaking generally, they appear to make no personal effort in attempting to have matters improved in this direction.

It is difficult to understand this anomalous attitude: the explanation may lie in the fact, as the old adage has it, that 'dead men tell no tales'. Certainly a live Kaffir who has been assaulted is in a position to do a great deal of harm on his return home by persuading his friends not to allow themselves to be recruited."¹⁸

White miners, defying the regulations, often make Africans do dangerous work, such as charging and lighting up, for which they are not trained, paid, or held responsible. "There is a tendency on the part of miners", reported Brakpan's Inspector of Mines, "to give word to their Natives to light up and to remain sitting at their box or walk away to some convenient place on the way out and there await the arrival of the Natives. With low sloping widths and with perhaps 70 holes to light up, the lot of the Native is not enviable."

While miners are often prosecuted, and usually punished with a £10 fine if convicted, for failing to examine the working face

¹⁸1912, U.G. 49 Rep. of Min. Eng. for 1911, p. 111.

thoroughly after blasting, and for allowing Africans to kill or injure themselves by drilling in or next to misfired holes, the penalty is light in comparison with the sentence of £10 or two months' imprisonment commonly imposed on Africans for breaking safety rules.

Mine managers are ultimately responsible for preventing accidents. They are occasionally prosecuted, but the penalties usually imposed appear to be slight in relation to the injuries caused. One manager was fined £15 as the result of an explosion in a Natal colliery that killed 20 Africans.¹⁹ In another case a £25 fine was imposed for neglect that led to the flooding of a mine in which 39 Africans and 2 whites died.²⁰ After a gas explosion resulting in the death of 78 Witwatersrand colliers, the manager was fined £50.²¹ The commission that inquired into the causes of the Coalbrook disaster found negligence on the part of the management, but so far there has been no prosecution.

The original Mines and Works Act of 1911 fixed a maximum penalty of £250 or 12 months' hard labour for any act or omission which endangered the safety of any person. If the accused had caused serious bodily injury, a fine of £500 could be imposed; while in the event of a person having been killed, the maximum penalty was £1000 or two years' imprisonment or imprisonment without the option of a fine. In the Consolidated Act of 1956 the higher penalty for cases in which death results has been omitted, so that the maximum is now £500 or 12 months' imprisonment, whether a person is killed or injured.

Speed-up

Mining is carried out at greater pressure on the Witwatersrand and Orange Free State goldfields than elsewhere in the Union. 'Forcing the output' or 'increasing the monthly production' have been given as reasons for high death rates in gold and coal mines. Managers are responsible for speed-up, but are rarely brought to book for accidents caused by inadequate supervision and hurry.

The complaint is an old one. The Inspector of Mines for Germiston complained in 1911²²:

"The pressure is felt throughout the mine. The officials who work possibly on the bonus system must be biased in their

¹⁹1937 U.G. 23 Rep. of Govt. Min. Eng. for 1922, pp. 38, 29.

²⁰1936 U.G. 17 Rep. of Govt. Min. Eng. for 1935, pp. 59, 64.

²¹1937 U.G. 19 Rep. of Govt. Min. Eng. for 1936, p. 68.

²²1912 U.G. 49 Rep. of Govt. Min. Eng., p. 108.

judgments when the question arises of the advisability of cutting pillars, building stalls and packs, or allowing a doubtful stope to remain idle. They are probably aware that Natives start work before the arrival of the gangers, who are therefore unable to inspect their working places. Of course, the officials will not confess that working under high pressure is answerable for scamped or even neglected work, and consequently the death rate."

The pressure comes from the top. Directors and managers believe that the cost of sinking a shaft decreases as the speed increases. Moreover, they want the mine to be brought quickly to the producing stage, when dividends can be declared, interest on capital saved, and capital gains realized on the stock exchange.

Shift bosses and miners, in turn, being paid at bonus or contract rates based on output, stand to earn more by making the African work harder. Two-thirds of the Africans on mines on the Rand, however, are not paid by results, and gain nothing from the drive for greater output.

Hustle, inefficiency, and a false sense of confidence inspired by the unusual strength of the hanging wall encourage men to take chances to the point of neglecting ordinary precautions. A miner will instruct Africans to shovel away rock before he has examined and secured the working place after the blast at the end of the preceding shift. This practice of putting them to work under faulty hanging before the miner or timber men had inserted props and packing was "an absurd and dangerous custom", said the Government Mining Engineer in 1919. "Native and Coloured persons can, many of them, timber quite well, and more attention should be given to the matter of temporary props to save the Native gangs from death and injury."²³

Falls of rock are consequently a common cause of injuries, and today account for more than half the number of deaths and more than one-fifth of all accidents in gold mines.

The activities of the Accidents Prevention Committee, which was set up in 1913, produced a more serious attitude to accidents than that shown in the earlier period. Other factors making for greater caution are the adverse effect of a high death rate on the recruiting of workers, the slowing down of production owing to shifts lost through injuries, and the rising cost of compensation.

²³1914, U.G. 28 Rep. of Govt. Min. Eng. for 1913, pp. 46, 47.

Speed-up comes from the management's excessive desire to make profits. As the Coalbrook disaster showed, the drive for profits can reduce the margin of safety in other ways. It was alleged in the inquiry that the management had caused the coal pillars supporting the roof to be thinned down—'robbed' is the expression used—to such an extent that the roof caved in. It was against regulations to make the pillars smaller than the size shown in the plan; but according to the evidence, the management had done just that in order to "prolong the life of the section". The Commission found that "the subsidence of the mine was due to the negligence and omission of the present consulting engineer, the general managers, the managers and assistant managers".

Miners' Compensation

When Sir Godfrey Lagden prevailed on the Chamber of Mines in 1903 to compensate injured Africans, the sum of £35²⁴ was provisionally fixed for death or total disablement. The mines finally decided to pay voluntarily and without statutory obligation the same amounts as those prescribed for Chinese by the Labour Importation Ordinance: £10 for the loss of both hands or both feet or one foot and one hand, or for the complete and permanent sight of both eyes, or death. £5 was payable for the loss of one foot, or one hand, or one eye. Lads under 16 years and men from Central Africa received only half these amounts. No benefits were payable to a worker who "exposed himself to unnecessary danger or died or was injured by disease, illness or disorder, or while under the influence of intoxicating liquor".

At the figure of £10 paid to dependants, the African miner was cheap in death as in life and hardly worth the cost of safety measures that would curb the drive to step up production. An incentive to prevent accidents was therefore provided when the Native Labour Regulation Act of 1911 imposed on mine owners, despite their protests, a statutory obligation to indemnify injured Africans. They were to receive from £1 to £20 for permanent loss of trade if still able to do other work, and from £30 to £50 for permanent loss of earning power, or, from 1914 onwards, for death.

The Director of Native Labour assessed the amount of compensation, collected it from the mining company, and paid it

²⁴14th An. Rep. for 1903, p. 147.

as he thought fit to the worker or his dependant. In the case of death the award did not form part of the deceased's estate; if the Director decided that he had no dependant, the money was repaid to the employer.

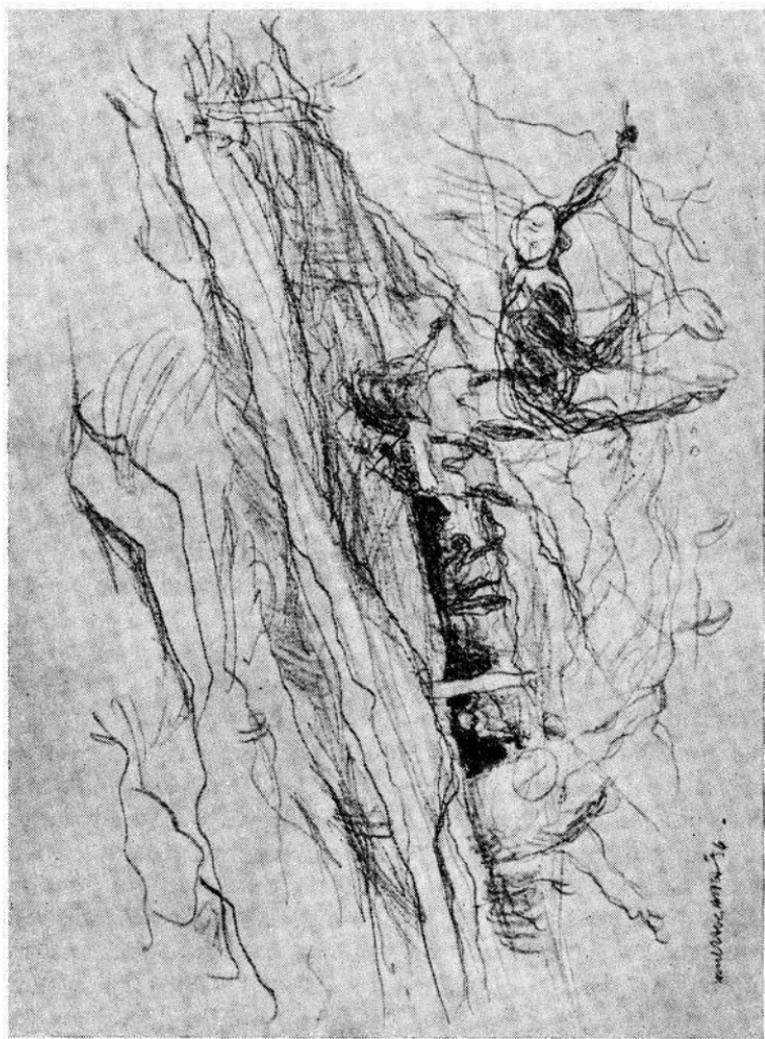
African miners were very dissatisfied with the scale and administration of benefits. The maximum of £50 allowed for total permanent incapacitation was the equivalent of 13 months' average earnings. A man who lost a leg and who had virtually no hope of getting employment, was compensated for partial incapacitation and received a maximum of £20, the equivalent of only a few months' earnings. The Natives' Grievances Mining Commission found that an injured African received less than the amount of his probable loss, and markedly less than the benefit paid to a white miner in relation to earning power. Yet, in spite of its inadequacy, the improvement made by the Act of 1911 had a salutary effect on accident prevention. "Compensation now paid to Natives for accidents", reported a mining inspector in 1914, "has been a great incentive to more care being exercised by the mine officials to reduce accidents".²⁵

African miners were not brought within the scope of the Workmen's Compensation Act of 1914. Like other 'Native labourers' as defined by the Native Labour Regulation Act, they continued to receive a maximum of £50 for total incapacitation as compared with the £144 paid under the Act of 1914 to a man earning £4 a month. Mine workers suffered this discrimination until 1934, when a new Workmen's Compensation Act was passed that covered workers of all races.

The Act of 1914 did not, however, abolish discrimination. It excluded Africans from the pension rights provided for other permanently disabled persons. This inequality remained under the existing Workmen's Compensation Act, which was passed in 1941. Coloured, Indian and white workers receive a pension equivalent to 55% of normal earnings. Africans are allowed only lump sum benefits, based on earnings, but not less than £150.

The widow of a white miner killed in the Coalbrook accident will draw a pension of from £30 to £75 a month, depending on the number of children, under the compensation law. The African miner's widow will get a lump sum of at least £180, paid to her at the rate of £3 or £4 a month, but no pension. In her case the number of children does not affect the amount of

²⁵1914 U.G. 30 Rep. of Govt. Min. Eng., p. 107.



In the mine, after blasting

compensation. The white widow, in addition to her statutory pension, received £150 from the white Miners' Union (from which Africans are debarred by law), £75 from the Chamber of Mines to cover immediate expenses, her husband's salary for seven months, and a rent-free house for the same period. The African widows received none of these benefits, not even on a reduced scale. The white widow will also draw a pension from the Governor-General's National Mines Disaster Fund, which was established with money donated to the victims of Coalbrook. Benefits to Africans from this fund will take the form of lump sum payments, but no indication has yet been given of the amounts. An official of the Social Welfare Department was reported as having said on the question of granting relief from the fund to Africans: "It seems to us that there is no need to throw money about in all directions till we have the whole business sorted out".

Accident Prevention

MINE managements have made a substantial effort to reduce the accident and fatality rate by adopting measures within the traditional framework of the mining organisation, i.e. without disturbing the relationship between white and African worker or raising the status of the African miner.

An Accident Prevention Committee, formed in 1913, organises safety first competitions, first aid classes on gold mines and collieries throughout the Transvaal and Free State. About 50,000 Africans are trained annually in first aid operations. Those who qualify receive a cash bonus. Africans are likely to be taught nowadays in a demonstration school the proper use of equipment, tools, mine boots and explosives. Many of them are subjected to aptitude tests which divide them into categories such as mechanical and non-mechanical. Persons who appear to possess the necessary qualities are put through a 'boss-boy' course to be trained as supervisors of African gangs.

Another great improvement was introduced when men from tropical regions were given an acclimatisation course on the surface before being exposed to the rigours of work at great depths.

Below 9,000 ft. temperatures can be as much as 108°F. Preventive measures are adopted to extract the maximum

amount of work short of risking death from heatstroke. The medical instructions are that:

'A native with a temperature of 101°F to 105°F is hosed down with water for three to five minutes, compressed air being used to accelerate the cooling if his temperature is 103°F or more. He is then rested for an hour, after which his temperature is taken again. If it is then down to 100°F or less, he is sent back to work at a normal rate if his temperature had not been 103°F or more before cooling. If it had, he is sent back to light duty under the close supervision of his boss boy for the remainder of that shift but works at the normal rate the following day.

If a native with a temperature of 101°F to 105°F does not cool to 100°F or less after an hour's rest, he is not permitted to work again for the remainder of the shift but is sent to hospital for a medical examination.'

Before these precautions were taken, an average of 13 African miners died every year from heatstroke (1927-53). Since 1954 the average number of deaths from this cause has been 11.

COALBROOK POSTSCRIPT

COALBROOK was the biggest disaster in the history of South African mining. Never before have so many men been killed in one fall of rock.

We do not yet know the full significance of what happened at the Coalbrook mine on January 21, 1960. Not all the facts have been disclosed, and the case is still open.

At the time of writing, the law officers have not yet made known their decision whether or not to prosecute. What we do have are the combined findings of the statutory board of inquiry and inquest published on July 1960. The main conclusions in summary form are:

The whole of the north-eastern sector of the underground workings in the No. 2 seam of the Coalbrook North Collieries subsided on January 21, 1960. None of the bodies of the 437 persons killed has been recovered. The court finds that death occurred by violence.

The subsidence resulted in methane gas being liberated into the underground workings. The cause of death was multiple injuries due to crushing by the fall of ground and/or anoxia (deficiency of oxygen) due to the presence of a large percentage of methane gas or coal dust.

All the persons entombed underground died at about 7.30 p.m. on January 21, 1960.

The subsidence of sectors of the No. 2 seam workings occurred between 7.26 p.m. and 7.32 p.m. on January 21, 1960, and followed on the collapse of portions of the so-called old

section 10 of the mine that had taken place on December 28, 1959, and at 4.45 p.m. on January 21, 1960.

The subsidence of the mine was due to the negligence and wrongful act and omission of the present consulting engineer (Mr. G. Dixon), the general managers (Mr. R. E. Burnton and Mr. W. Lorimer), the managers (Mr. Ferguson and Mr. Taylor), and the assistant managers (Mr. H. Easingwood and Mr. Shankland) and other managers employed at this colliery from 1950 to January 21, 1960, personally and through their servants and agents.

One other fact of importance must be noted. On March 7, 1960, the Inspector of Mines decided to close the mine as a safety measure. When the company appealed, however, the Administration at a higher level reversed the decision. The mine is now functioning subject to many safeguards which had apparently not been adopted before the catastrophe.

We do not know if the timely adoption of these safeguards would have averted the subsidence. One can only ask questions. Were rumblings and cracks noticed months before the roof caved in? Were pillars 'robbed' of coal? Did men as well as rats begin to desert the workings many hours before the collapse? Is it true that men were ordered to go back to work under the threat of prosecution?

The questions have not been fully answered. Perhaps they never will be. Amidst the doubt and confusion we can only conclude that the defects which were commented on 50 years ago have not yet been eliminated from South Africa's mining system.

South Africans reacted typically to Coalbrook: a great amount of verbal sympathy at the time, a quick return to forgetfulness (expedited by the political emergency), and a poor response in hard cash. After all, only six white men were killed. Moreover, the 431 dead African miners belonged to Basutoland and Moçambique and were therefore not the responsibility of South Africans. We have, unfortunately, no reason to console ourselves with the thought that their deaths will bring about reforms in mining laws and practices, or in the position of the black miner in the industry.