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"The South African Mines, Commerce & Industries."

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VOL. XXII., PART I., NO. 1096.] JOHANNESBURG, TRANSVAAL, SATURDAY, SEPT. 28, 1912. [WEEKLY, PRICE 6D.

Professional Directory.

Transvaal Gold Mining Estates, Ltd.

(Incorporated in the Transvaal.)

DIRECTORS' REPORT

For the Year ended 31st March, 1912.

Submitted at the Fifteenth Annual Ordinary General Meeting of Shareholders, held in the Board Room, The Corner House, Johannesburg, on Friday, the 20th September, 1912, at 12 o'clock noon.

To the Shareholders,

Gentlemen,—Your Directors have much pleasure in submitting their Fifteenth Annual Report, together with the Balance Sheet, Working Expenditure and Revenne Accounts and Appropriation Account, duly audited, for the year ending 31st March, 1912.

CAPITAL ACCOUNT.

The Capital of your Company remains unchanged.

PROPERTY.

During the year your holdings have been increased by :—

62 Claims on the Farm Vaalhoek No. 1451.

345 Claims on the Farm Peach Tree No. 568.

105 Claims on the Farm Grootfonteinberg No. 549.

and a Mynpacht in extent 177 morgen, 36 square roods on the one-qnarter of the Farm Elandsdrift No. 41, which was proclaimed a Public Digging on the 15th March, 1912.

The rights accruing to the Company on its undivided half share of the Farm London No. 1,220, have also been secured, but the date of Proclamation has not yet been announced by the Government.

The proclamation of the Farm Klipkraal No. 460, as a Public Digging, mentioned in the last report, has been withdrawn for the time being.

The following are the details of the various properties held by your Company :—

FREEHOLD FARMS.

Name.	No.	Area in Morgen and Square Roods.	Area in Acres.	Remarks.
Belvedere	1,344	3,099 156	6,559·088	
Blijfstaanhoogte ..	1,257	2,875 96	6,084·971	Western Portion.
Boschoek	96	2,981	6,309·286	
Buffelsfontein ..	1,218	3,284 427	6,950·738	
Doornhoek	99	2,166	4,584·339	
Driekop	1,350	3,772 348	7,983·560	
Elandsdrift	41	3,541 120	7,494·568	
Finsbury	621	2,887 5	6,110·337	
Goedgeluk	140	4,701 335	9,949·785	
Goedverwacht ..	660	3,676 120·5	7,780·296	
Grootfontein	217	4,840 288	10,243·961	
Hendriksdal	216	1,791 8	3,790·653	
Hermansberg ..	1,035	2,765 545	5,852·315	
In-de-Diepte	800	3,344 44	7,077·590	Undivided two-thirds
Klipgat	209	996 131·5	2,108·080	Undivided half.
Klipkraal	460	2,306 498	4,880·824	
Kliprots	614	3,625 68	7,672·335	
Ledovine	70	3,153 55	6,673·343	
London	1,220	2,421 22·5	5,124·054	Undivided half.
Nooitgedacht ..	93	2,488	5,265·852	
Nooitgedacht ..	945	2,333 580	4,937·999	
Ponieskrantz	1,351	5,129 473	10,855·695	
Rhenosterhoek ..	1,272	1,973 17	4,175·860	Eastern half.
Vaalhoek	151	2,130 98	4,508·178	
Vilgenboom	1015	2,816	5,960·064	
Vilgenhoek	1,194	1,682 252	3,560·941	Eastern half.
Waterhoutboom ..	523	2,789 507	5,903·096	
Willemsoord	1,034	1,801 376	3,811·949	

31½ Shares in a Syndicate of 32 Shares owning the Farm Olifantsgeraamte No. 459, in extent 3,781 morgen, 286 square roods or 8,002·588 acres.

MINERAL RIGHTS.

Name.	No.	Morgen.	Sq. Roods.	Acres.	Remarks.
Doornhoek	1,398	4,150	347	8,783·597	
Nooitgedacht ..	945	217	100	459·316	Held under Mynpacht Brief No. 288 of December, 1893
Onverwacht	208	3,076	197	6,510·423	
Vaalhoek	1,451	284	12	601·090	Held under Mynpacht Brieven Nos. 571 and 574 of January, 1909.
Elandsdrift	41	177	36	375·38	Held under Mynpacht Brief No. 605 of November, 1911.
London	1,220	968	248	2,049·29	Undivided half.

Concession No. 12 granted by the Government in perpetuity in respect of Farms Belvedere No. 1,344, Driekop No. 1,350, Grootfontein No. 217, Ledovine No. 70, Ponieskrantz No. 1,351, and Waterhoutboom No. 523.

Concession No. 19, granted by the Government in perpetuity in respect of Farms Elandsdrift No. 41 (three-quarters of Farm) and Hendriksdal No. 216.

Concession No. 73 granted by the Government until 5th May, 1913, in respect of Farm Morgenzon, in extent 1,004 morgen, 368 square roods or 2,125.095 acres.

CLAIMS.

177 Claims North of Morgenzon Farm.
24 Claims South-west Boundary of Morgenzon.
45 Claims Beta extension.
409 Claims Peach Tree.
105 Claims Farm Grootfonteinberg, adjoining Peach Tree.
21 Claims Desire Farm near Jubilee Mine.
38 Claims on Grasop adjoining Jubilee Mine.
72 Claims Vaalhoek.

891

1 Machine Stand near Jubilee Mine.
Water-right No. 7 near Jubilee Mine.
Water-right No. 1 Clewer Mine (special grant).
Special Water-right Farm Bourke's Luck, No. 75.
Water-right Farm Elandsdrift No. 41.

ACCOUNTS.

The Accounts now submitted shew that the net profit on working for the year has amounted to £205,103 19s. 3d., and this amount, together with the balance brought forward of £60,118 9s. 3d., Funds transferred £1, and £191 0s. 6d., Unclaimed Dividends written back, has been dealt with as follows :

Mining Taxation Act, 1910	£18,582 10 2
Dividend Account	166,165 5 6
Balance of Appropriation Account carried forward	80,666 13 4
	£265,414 9 0

The Cash and Cash Assets, after deducing Liabilities, amount to £80,666 13s. 4d., in addition to which there is still an amount of £26,638 9s. 5d., remaining from the issue of £124,000 5 per cent. First Mortgage Debentures. Of this, however, £20,792 18s. 9d. have already been allotted to sundry items of further expenditure, including the Elandsdrift Power Station, Peach Tree Compressor Plant, Electrification of the Jubilee Tramline, extension of Cyanide Plant, Crusher Station, etc., etc., which will give the Central Works a capacity for treating 13,000 tons per month.

GOLD RESERVE.

In deference to the wishes expressed by Shareholders and others, it was decided to discontinue the carrying of Reserve Gold, and the amount in reserve at the end of February was declared with the results for March as a special item. In future the actual

Transvaal Gold Mining Estates, Limited—continued.

results will be declared, and Shareholders must realise that variations in the amount of profits may occur from month to month. Any circumstances entailing abnormal results will be explained when the monthly profits are declared.

Special attention is directed to the list of Unclaimed Dividends attached hereto.

CAPITAL EXPENDITURE.

The total expenditure on Capital Account, during the year under review, has amounted to £13,393 5s. 8d., and is made up as follows:

Property Account		£2,608 13 0
Buildings, Machinery and Plant:		
Central Mines	£12,369 6 3	
Elandsdrift Mine	329 16 8	
		12,699 2 11
(Details of the above amounts are contained in the Reports of the General Manager and Elandsdrift Resident Manager).		
Belvedere Power Station		25,500 3 6
Tree Planting:		
Central Mines	269 13 3	
Elandsdrift Mine	309 16 6	
Vaalhoek Mine	17 5 7	
		596 15 4
Wattle Plantation:		
Elandsdrift		1,988 10 11
		£43,393 5 8

BELVEDERE POWER STATION.

This was completed during the year and came into permanent use on 30th July, 1911.

DIRECTORS.

You are requested to confirm the appointment of Mr. J. H. Ryan, as a Director of the Company, in place of Sir A. Bailey, K.C.M.G., resigned.

In terms of the Company's Articles of Association, two Directors, Messrs. J. H. Ryan and S. Evans, retire, but are eligible and offer themselves for re-election.

AUDITORS.

You are requested to elect Auditors in the place of Messrs. Howard Pim and Chas. Stuart (who has acquired the interests of the firm Messrs. Ball and Stuart), who retire in accordance with the Company's Articles of Association, and to fix their remuneration for the past audit.

H. C. BOYD, Chairman.
J. H. RYAN
E. A. WALLERS.
S. EVANS.
B. T. BOURKE.
A. WOOLLS SAMPSON.
Directors.

W. RUSSELL SLACK, Secretary.

Johannesburg,
29th May, 1912.

Working Expenditure and Revenue Account for the Year ending 31st March, 1912.

CENTRAL MINES.

Dr.			Cr.	
To Mining Expenses ... £56,711 10 5			By Gold Account	£321,042 12 7
,, Developing Expenses 27,918 19 3				
,, Prospecting Expenses 5,020 17 10				
	£89,651 7 6			
,, Tramming Expenses	8,013 10 9			
,, Milling Expenses	13,080 3 4			
,, Cyaniding Expenses	20,387 4 8			
,, General Expenses	11,640 15 6			
		£142,773 1 9		
,, Profit on Working for the year carried to Summary		178,269 10 10		
		£321,042 12 7		£321,042 12 7

Working Expenditure and Revenue Account for the Year ending 31st March, 1912.

ELANDSDRIFT MINE.

Dr.			Cr.	
To Mining Expenses £2,522 2 10			By Gold Account	£39,404 [illegible]
,, Developing Expenses 1,781 12 10				
	£4,303 15 8			
,, Tramming Expenses	536 0 1			
,, Milling Expenses	2,047 11 5			
,, Cyaniding Expenses	1,471 10 7			
,, General Expenses	1,560 8 0			
		£9,919 6 0		
,, Profit on Working for the year carried to Summary		29,484 14 8		
		£39,404 0 8		£39,404 [illegible]

Transvaal Gold Mining Estates, Limited—continued.

Working Expenditure and Revenue Account for the Year ending 31st March, 1912.

VAALHOEK MINE

Dr.			Cr.	
To Mining Expenses ...£6,305 13 6			By Gold Account	£22,400 19 1
,, Developing Expenses 1,359 11 1				
	£7,665 4 7			
,, Tramming Expenses	280 19 1			
,, Milling Expenses	1,943 19 10			
,, Cyaniding Expenses	6 351 0 8			
,, General Expenses	810 16 2			
		£17,052 0 1		
,, Profit on Working for the year carried to Summary		5,348 18 9		
		£22,400 19 1		£22,400 19 1

Working Expenditure and Revenue Account for the Year ending 31st March, 1912.

SUMMARY.

Dr.			Cr.		
To European Expenses	£2,330 10 8		By Profit on Working—		
,, Head Office Expenses—			Central Mines ...£178,269 10 10		
Salaries, Agency Fees and Rent ...£3,271 1 8			Elandsdrift Mine	29,484 14 8	
Stationery, Printing, Advertising, Postages and Telegrams 572 11 7			Vaalhoek Mine	5,348 18 9	
Directors', Auditors' and Debenture Trustees' Fees 1,415 0 0				£213,103 4 3	
Claim Licences and Concession Rents 3,530 7 2			,, Interest Account	4,462 3 5	
Sundry 925 8 9			,, Rent Account	3,221 17 7	
	9,717 9 2		,, Tributors' Revenue	1,155 4 2	
	£12,047 19 10		,, Freehold Revenue	171 6 1	
,, Debenture Interest	6,200 0 0		,, Sundry Revenue	1,238 3 7	
	18,247 19 10			10,248 14 10	
,, Credit Balance carried to Appropriation Account	205,103 19 3				
	£223,351 19 1			£223,351 19 1	

Appropriation Account, 31st March, 1912.

Dr.			Cr.		
To Mining Taxation Act, 1910—			By Balance—		
Net amount of Tax due for the year ending 31st March, 1912		£18,582 10 2	As per Balance Sheet 31st March, 1911		£60,118 9 3
,, Dividend Account			,, Balance of Working Expenditure and Revenue Account—Summary—		
Dividend No. 1	£6 12 0		For the year ending 31st March, 1912		205,103 19 3
Dividend No. 2	2 16 0		,, Funds Transferred—		
Amounts paid since publication of last Accounts.			Amount overdebited Appropriation Account 31st March, 1911		1 0 0
Dividend No. 11 of 15 per cent. declared 25th August, 1911	90,633 15 0		,, Sundry Shareholders' Dividend No. 3	£106 12 3	
Dividend No. 12 of 12½ per cent. declared 11th March, 1912	75,528 2 6		,, Sundry Shareholders' Dividend No. 4	81 8 3	
		166,165 5 6			191 0 6
,, Balance Unappropriated carried to Balance Sheet		80,666 13 4	Unclaimed Dividends written back in accordance with Article No. 123 of this Company's Articles of Association		
		£265,414 9 0			£265,414 9 0

W. RUSSELL SLACK, Secretary.

H. C. BOYD, Chairman.
J. H. RYAN,
B. T. BOURKE,
Directors.

HOWARD PIM,
CHAS. STUART,
Chartered Accountants,
Auditors.

Johannesburg,
29th May, 1912.

Transvaal Gold Mining Estates, Limited—continued.

Balance Sheet, 31st March, 1912.

Dr.			Cr.		
To Capital Account—			By Property Account—		
Authorised.			As per Balance Sheet 31st March, 1911		£411,060 8 —
640,000 Shares of £1 each	£640,000 0 0		62 Claims on Farm Vaalhoek No. 1451, purchased for	1,240 0 0	
Less 35,775 shares of £1 each in reserve	35,775 0 0		104 Claims on Farm Peach Tree, No. 568, purchased for	1,300 0 0	
604,225 Shares		£604,225 0 0	Cash for Transfer Duty, etc.	68 13 0	
,, Share Premium Account—					£413,610 1 2
As per Balance Sheet, 31st March, 1911	101,750 0 0		,, Mine Development—		
,, Funds transferred from Appropriation Account—			Central Mines, 362,551 tons	£124,685 9 10	
For expenditure on Mine Development and Equipment in excess of Working Capital provided	72,041 2 2		Elandsdrift Mine, 26,013 tons	8,186 10 0	
		173,791 2 2	Vaalhoek Mine, 40,522 tons	12,220 11 3	
,, 5 per cent. First Mortgage Debentures		124,000 0 0		145,092 11 1	
		£902,016 2 2	,, Buildings, Machinery and Plant—		
,, Sundry Shareholders—			Central Mines	209,603 16 7	
Dividend No. 12	75,528 2 6		Elandsdrift Mine	8,561 16 2	
,, Unclaimed Dividends Account—			Vaalhoek Mine	13,103 11 10	
Unpresented Dividend Warrants, Dividends No. 5 to 11	£1,441 1 5		Belvedere Power Station	71,973 5 9	
Unpresented Bearer Share Warrant Coupons, Dividends No. 5 to 11	115 0 4			304,241 9 7	
	1,556 1 9		,, Tree Planting—		
,, Sundry Debenture Holders—			Central Mines	9,887 15 11	
Coupon No. 4, due 1st April, 1912	3,100 0 0		Elandsdrift Mine	917 6 4	
,, Unclaimed Debenture Interest—			Vaalhoek Mine	395 11 0	
Coupons No. 1 to 3	142 0 0			11,200 13 3	
	80,326 4 3		,, Wattle Plantations—		
,, Sundry Creditors—			Elandsdrift	2,229 11 8	
On account of Wages, Stores, etc.	18,547 16 0				161,767 11 7
Amount due to Government under Mining Taxation Act, 1910	16,965 10 0				£875,377 12 9
	35,513 6 0				
		115,839 10 3			
,, Appropriation Account—					
Balance unappropriated		80,666 13 4			
Contingent Liability—					
To £64 per share uncalled on 5 Co-operative Exchange Yard, Limited, shares	£320 0 0				
		£1,098,522 3 9			£1,098,522 3 9

NOTE.—The amounts set against the above assets have been arrived at by taking the cost price less any allowance for depreciation which has been considered necessary.

By Shares in other Companies, at cost		
Co-operative Exchange Yard, Ltd., 5 Shares of £80 each, of which £16 per share has been paid	80 0 0	
Rand Mutual Assurance Company, Ltd., 50 Shares of £10 each, fully paid	500 0 0	
		580 0 0
,, Ore on Hand—		
Central Mines, 3,173 tons	2,474 8 0	
Elandsdrift Mine, 497 tons	188 14 0	
		2,663 2 3
,, Stores and Materials—		
In stock	£15,917 16 4	
In transit	808 3 2	
	16,725 19 6	
,, Live Stock and Vehicles	6,513 12 9	
,, Office Furniture	1,627 2 5	
,, Bearer Share Warrants	472 14 4	
,, Sundry Debtors and Payments in Advance	5,550 4 2	
	30,889 13 2	
,, Deposits, Fixed and on Call, bearing interest	120,670 0 2	
,, Cash at Bankers and in hand	12,340 10 6	
,, Gold Consignment Account	55,841 2 2	
	189,041 17 10	
		219,963 11 0
		£1,098,522 3 9

W. RUSSELL SLACK, Secretary.

H. C. BOYD, Chairman
J. H. RYAN
R. T. BOURKE
Directors.

To the Shareholders,
Transvaal Gold Mining Estates, Limited

We have examined the above Balance Sheet with the books, accounts and vouchers of the Company to date thereto. We report that we have obtained all the information and explanations required, and that in our opinion this Balance Sheet is properly drawn up so as to exhibit a true and correct view of the state of the Company's affairs according to the best of our information and the explanations given to us and as shown by the books of the Company, supported by returns from the Mines and from the London Office.

HOWARD PIM,
CHAS. STEART,
Chartered Accountants
Auditors.

Johannesburg,
29th May, 1912.

THE SOUTH AFRICAN

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NOTICE.—The postage of this issue of the *S.A. Mining Journal* is: South Africa, 1½d. All other parts, 2½d.

CONTENTS.

Notes and News

The Special 21st Anniversary Number of the "South African Mining Journal" will be on sale at the various branches of the Central News Agency to-day. The number is, of course quite distinct from the ordinary weekly issue of the paper, and is published at 3s. 6d. per copy. All orders will be executed by the Central News Agency.

It may be explained that the delay in connection with the issue is due to the fact that in endeavouring to secure completeness for the volume the size outran expectations. Its 470 pages of articles and illustrations render the whole easily the largest and most comprehensive work on South African mining ever produced.

* * * *

More Honours for Sir George Albu.

The many friends of Sir George Albu will be glad to hear that H.M. the Kaiser has signified his intention of conferring on him a high German distinction. The announcement, we understand, was made by Dr. Keunzer, the Acting German Consul, at the opening of the new German Church last Sunday, and the honour is a fitting reward for one who has done so much for the German community on the Rand. Sir George Albu is unique among leaders of the Rand mining industry in that two great Sovereigns have delighted to honour him. Johannesburg, which owes him so much for the part he has played in the introduction of capital, rejoices in his new honours.

* * * *

Leeuwpoort Plant.

We understand that the final decision regarding the reduction plant for the Leeuwpoort tin mine is in the nature of a compromise, as it includes both ordinary stamps and two heavy Nissen stamps. The experts were divided on the question of sliming, and it remains to be seen by the actual results how the different types of stamps behave in this important particular. The Leeuwpoort plant will also include a Dorr Thickener and Classifier.

* * * *

Daggafontein Shaft-sinking.

Owing to funds becoming exhausted, the Daggafontein people are contemplating the suspension of shaft-sinking operations, and have given notice to their staff at the mine. It is understood that Mr. Lars Pedersen, who has been in charge of the property since the work began, will soon take over the management of the Machavie mine.

* * * *

Taxation of Diamonds in German S.W. Africa.

H.M. Consul at Lüderitzbucht, Mr. E. H. W. Meyer, reports that an Ordinance will shortly be published amending the present taxation of diamonds found in the area between the Orange River and the Tropic of Capricorn, bounded on the east by a line drawn parallel to, and 62 miles from, the coast. The new rate of taxation will be 66 per cent. of the value realised by the output, less seven-tenths of the working expenses, and will come into force as from January 1 last, but in order that the companies may adapt themselves to the new conditions they will be allowed this year to elect whether they will be taxed under the old or new system. People entitled to royalties will receive a percentage of the proceeds of taxation from the Treasury in lieu of the royalties hitherto payable. Mr. Muller states that several companies which had suspended mining in consequence of the incidence of the old method of taxation have resumed work. Mining operations north of the 26th degree will be extended as soon as practicable after the new Ordinance is published, and work in the Pomona Territory will commence very shortly. A narrow gauge railway is being constructed from Prince of Wales Bay to Bogenfels. This railway passes through Pomona, and will materially assist in the working of the southern fields.

S.A. Prospecting and Concessions.

The accounts of the S.A. Prospecting and Concessions Syndicate cover a period of ten months to April 30, 1912, the curtailment being due to a desire on the part of the directors that the shareholders should have the advantage of the presence of the superintending engineer at the annual general meeting, and this gentleman must return to the mine with as little delay as possible. As Mr. E. A. H. Cohen is the engineer in question, we can understand the directors' anxiety to allow the shareholders to hear his views. The syndicate's operations have been mainly confined to the Empress-Palmeira mine, where the developments on the west lode are stated to have been "of a highly satisfactory and valuable character."

* * * *

Ermelo Coal.

Some unusually good samples of coal have been brought to town lately from the Ermelo district, and have been on view at the offices of Messrs. Douglas Wilson and Rusk, Natal Bank Buildings. One variety appears to be a kind of cannel, and on distillation yields a large percentage of gas and by-products. The resultant coke appears to be of a quality which should meet with a good market here. Samples of oil shale from the same neighbourhood have also been shown.

* * * *

The Century District.

The main shaft at the Century Tins is reported to have reached a depth of about 400 feet, at which depth the Rissik lode, 30 inches wide, pans excellently, while other bodies are opening up very well. It is understood that a 5 to 10-stamp mill will shortly be erected, as a result of the report upon the ore which was sent to Germany for test purposes. There is a rumour to the effect that negotiations have been in progress with the Bailey group in connection with this property. The Government borehole obtained a supply of from 100 to 150 gallons of water per hour at 140 feet, and is being continued. A good deal of prospecting is said to be in evidence upon the property, particularly upon the North-west.

* * * *

Cum Grano Salis.

The following explanation of the hardness of a certain body of Kimberlite appears in a report which has come under our attention. It, together with the concluding suggestion, is worth the distinction of a special reference:—"This hard Kimberlite will not pulverise by exposure to the weather. The reason for the extreme hardness of this Kimberlite is the absence of salt, saltpetre, magnesia, etc., which are the usual elements in Kimberlite that cause disintegration. Quite possibly it will be found that when the intrusion took place it cleaved through a subterraneous fresh water passage at some depth, with the result that during the period of activity the water washed out the aforementioned elements. This also accounts for some of the ground being hard from the surface at what may be termed the centre of activity, and the remaining slimes being deposited mainly in the less active portions of the mine. If such is proved to be the case, soft friable ground will be found to prevail below the depth at which the fresh water was encountered in the pipe, and this is well worth investigating by sinking or boring."

* * * *

West Rand Consolidated.

The borehole put down on the southern section of this property, 2,500 feet south of the Rand shaft, for the purpose of locating the extension of the Battery Reef series, passed through the pay-band of this reef at a depth of 492 feet, the core assaying 7·8 dwts. over a width of 42 inches. The development to date on the three lowest levels of the Battery Reef in the Rand shaft, after adjusting all the high values, is as follows: 3rd level drive, 2,270 feet sampled, giving average value 1·8 dwts. over 12 inches; 4th level drive, 989 feet sampled, giving average value 9·2 dwts. over 42 inches; 5th level drive, 170 feet sampled, giving average value 19·8 dwts. over 12 inches. Winzes and raises: Between 2nd and 3rd levels, 593 feet sampled, giving average value 6·4 dwts. over 42 inches; between 3rd and 4th levels, 476 feet sampled, giving average value 5·1 dwts. over 42 inches; winzes below 4th level, 150 feet sampled, giving average value 25·5 dwts. over 42 inches. The progressive improvement of the reef values disclosed in these levels, and the result obtained from the borehole, are very encouraging factors.

* * * *

Our 22nd Volume.

Attention is drawn to the fact that the issue of the *S.A. Mining Journal* for September 28th, 1912, is numbered Vol. 22, Part I. **No. 1,096.** The last number of Vol. 21 appeared at the end of August, and the issue of this week is the fourth number of the new volume. The index to Vol. 10, Part I. (or really Vol. 21, Part II.) covering the period, March to August, 1912, will be issued with the journal dated October 5th, 1912.

* * * *

National Diamonds.

The last diamonds recovered from this mine, with samples of yellow and blue ground, are being exhibited in the window of Mr. Leo Simmons' jewellery establishment, Commissioner Street. In a recent letter to the company, Mr. Jerry F. Davies, referring to previous reports of a favourable kind, says:—"Since making the above reports on your property, I have inspected a parcel of 256½ carats of diamonds from your No. 1 Mine, of fair quality, recovered from some 2,100 loads of ground. Considering that you have not recovered more than two-thirds of your diamonds, I have no hesitation in saying that you have a payable property, which should more than pay the cost of working right from the start. Given an adequate plant and the treatment of about 700 loads per day, the mines should return an immediate profit to your syndicate."

* * * *

Transvaal Gold Mining Estates: A Successful Year.

Mr. H. C. Boyd, who presided at the annual ordinary general meeting of the shareholders of the Transvaal Gold Mining Estates, on September 20th, had a very pleasing statement to make to shareholders, although it was found necessary temporarily to reduce the monthly profits through the increased working of Chewer ore. The results of the latter half of the year were thereby adversely affected, but in the final result the year's profit of £205,104 showed an increase of several hundred pounds over the previous financial year. Shareholders received the very substantial sum of £166,162 in dividends, and £18,582 was paid in profits tax, leaving, with the balance brought forward from the previous year, undistributed profit of £80,667. On capital expenditure £43,393 was expended, the major portion of which was claimed by the completion of the Belvedere Power Station and extension of machinery and plant at the Central Mines. Labour was scarce throughout the year, but, notwithstanding this, a large amount of development work was accomplished at the Central Mine, with the satisfactory result that the tonnage of ore in reserve at the close of the year remained practically the same as at the end of the previous twelve months, in spite of the fact that the ore crushed was nearly 20,000 tons greater, and there was a slight increase in the average value per ton. A feature of the year's operations has been the important work carried out in the Duke's Hill, Columbia Hill, and Peach Tree sections, connection having been established between Columbia Hill and Peach Tree. Favourable developments, too, have been secured in the Duke's Hill.

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Outlook for the Current Year.

The general development of the other Central Mines during the period has been satisfactory, and it is particularly gratifying to see that the Theta, after many years, is not only continuing to hold its own, but yielding fresh payable disclosures. The outside prospecting operations of the past year call for no special comment. At present prospecting is proceeding on five farms, on one of which

the results are encouraging, and work is contemplated on a sixth. The past year at Elandsdrift was a most successful one, the profits showing an increase of £5,570, and the ore reserves being materially added to. At Vaalhoek, the working profits were more than doubled, but, on the other hand, the ore reserves were slightly decreased. The total profit in the current year to the end of last month amounted to £106,583, or a monthly average of £21,316, compared with an average of £17,092 for last year. The costs at the Central works are appreciably below those of last year, and the amount of ore treated has steadily increased. A most satisfactory point is that, while for the first month or two the company were treating ore somewhat above the average value of the reserves, this is no longer the case. The extensions to the plant of the Central Mines are now virtually completed, with the exception of the new crusher station, and the company were therefore able to mill last month 13,050 tons, the maximum estimated capacity of the plant; and while treating ore below the average value of the reserves, were able to show the very satisfactory profit of £23,055. Included in this is profit from treatment of the Clewer accumulated slimes, about 50 tons of which will now be treated daily, and form an appreciable addition to the profits. The milling of so comparatively low grade ore was, of course, not intentional. When the new crusher station is completed, the management will be able to keep much better trace of the ore from each mine, and, consequently, will have better information regarding the grade coming from each section. At Vaalhoek, the satisfactory profit of £951 was made last month. Mr. Boyd estimated that the net profit for the current half-year will amount to about £111,000, and, in concluding his speech, he had some very satisfactory statements to make on the improved efficiency at the mines. He said: "The general manager, in his report, emphasises the importance of obtaining an adequate supply of unskilled labour, and draws attention to the great efforts which have been made to improve the supply. It is most interesting and encouraging to be able to report that while the extended operations of the past financial year, both as regards milling and development, were achieved with an increase of only four per cent. in the supply over that of the previous year, the still further extension of development and production this year has been accomplished with virtually no further increase in the number of native labourers." The results secured reflect the excellence of the administration and management, and the great potentiality of the Transvaal Gold Mining Estates, which is to-day one of the foremost gold quartz propositions in the world.

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The Life of "Knights."

In the table of mine lives contained in our last issue we purposely refrained from venturing estimates as to the probable duration of productive operations at certain mines on account of exceptionally problematical factors having to be taken into the calculations. Amongst the mines which we deemed it inadvisable to publish any estimates for was the Witwatersrand Outcrop, or "Knights." We are well informed as to the present position in this property, but on account of the difficulty of assessing the tonnage in the tail of the T piece of mynpacht ground, we gave no estimate. However, one or two London journals, including the much advertised *South Africa*, presuming on a better knowledge of the facts than a paper on the spot, have published estimates in which the life of the "Knights" is given at seven years. This is grievously wrong. The Witwatersrand is likely to be producing and profit-earning for nearly three times that period. Whilst it is preferable to underestimate rather than overestimate lives in such tables, we cannot allow a calculation so very wide of the mark as that given by English contemporaries to go unheeded. Apparently the oversea wiseacres have worked out certain hypothetical figures, but unfortunately disregarded the deep level claims. One might forgive newspapers which do not pretend to any special knowledge of the Witwatersrand such a mistake, but we thought that *South Africa*, the proprietor of which, we believe, claims to have founded the Witwatersrand mining industry, might have been a little less incorrect.

TOPICS OF THE WEEK.

RAND MINERS AND LABOUR METHODS.

It would be difficult to overestimate the importance of the judgment given by Sir John Wessels in the Supreme Court the other day with regard to the claim of the Transvaal Miners' Association to appear in its collective capacity before a Conciliation Board on behalf of certain individual miners, unnamed, whose interests were alleged to be injuriously affected by the new form of contract. We have no wish to enter into a discussion of the points in dispute, which are to be argued by the parties concerned before the Conciliation Board now being constituted for the purpose of considering the matter, but it is not inopportune to refer to what appears to us the essential features of the judgment. The principles of arbitration and conciliation are, it will be admitted, capable of being used to immense advantage in the periodical differences of opinion which can scarcely fail to arise between Capital and Labour in these times of economic stress and strain. They have been the basis of various Acts which have been passed by the Legislatures of English-speaking races, and of innumerable conferences which have been held in times of industrial strife for many years past. In most cases, however, in spite of the excellence of the foundation, the superstructure has failed to maintain itself, and it is a simple matter to find the cause of this unfortunate state of things in the want of a sound sense of responsibility on the part of some of those primarily concerned, and in the absence of any means of compelling it. Sir John Wessels obviously had this clearly in mind when he decided that the Transvaal Miners' Association was not only not entitled in law to appear as one of the parties to the dispute about the contract, but was further incapable, on grounds of equity and public policy, from asking for an award from a Conciliation Board, whose decision it could, if it chose, treat with impunity as a sort of practical joke. These two points made by His Lordship appear to us to be worthy of profound consideration by those who pose as the friends and advisers of the working man, and are ready to go to any distance along the path of strife and the disorganisation of industry, emboldened and encouraged by the fact of complete irresponsibility. If arbitration and conciliation are to play the part that is their due in the affairs of an enlightened community, whose best interests are indissolubly bound together, it is essential that the question of honest intention and performance should be, as the saying goes, quite outside party politics.

An Act, known as The Industrial Conciliation and Arbitration Act, 1902, has been in force for several years in Western Australia, and it is interesting to learn that the defects of the Act, which was carried under the auspices, have been just those to which we have referred as resulting from a disregard of responsibility. During the last session of the State Legislature a Bill was brought in for the purpose of amending this Act, and the Monthly Journal of the Chamber of Mines of Western Australia has the following observations upon it in the course of a leading article:—

"We ventured to hope that in introducing the Bill this session the Government would endeavour to remedy in it some previously to remove what have been regarded from the beginning as the most conspicuous defects of the existing Act, that they would devise some means whereby the employers could, on equal terms with the employees before the Court as readily as the employees may be haled before that tribunal by the workers' unions, and that under the provisions of the amending bill due observance of the awards might be enforced upon the workers with the same facility and expeditiousness as upon the employers. We find on the contrary that the new bill not only restores all the objectionable clauses that led to the deadlock between the Assembly and the Council last year, but it provides provisions that must inevitably arouse fierce and bitter opposition from all sections of employers."

The effect of the Bill is, as well, to enlarge the scope of the Act in the interests of Labour, and to give the Arbitration Court absolute power to control every factor and

every movement of every employer and employee in every industry and every occupation in the State. The President of the Court is to be anybody whom the Government may appoint, and not, as hitherto, a Judge of the Supreme Court; in fact, the office may be included in the class of political appointments. The President will have wider powers than before, and in deciding whether any matter referred to the Court is or is not an industrial dispute, his decision is "final and conclusive," and shall not be questioned in the Supreme or any other Court. "Clause 61 of the Bill prescribes," adds the Monthly Journal, "that the jurisdiction of the Court shall not be affected by reason merely that no member of the applicant Union is employed by any party to the dispute, or personally concerned in the dispute. In other words, any Union can, at its own sweet will, drag into Court, whether they wish it or not, any number of persons who have no direct interest, perhaps no interest whatever, in a dispute, and they come automatically under the jurisdiction of the Court and must accept the President's award. These persons may have been for years past carrying on business in perfect harmony with their employees, and, suddenly, simply because a Union desires to stir up strife, they are brought into Court, told they must do this, that, and the other, and their former amicable relations with their workmen are perhaps hopelessly embittered." It is unnecessary to continue with our brief review of this most comprehensive Bill, which proposes a most arbitrary and all-powerful Court to carry out its provisions. The Act which is to be amended has saddled employers, great and small, with responsibility and let the other side go scot free—"the employees have long since ceased to have any respect for a Court which will not grant their every demand, however extravagant; and the honest opinion of almost every one who has anything to do with it is that the Act, so far from tending to promote industrial peace, has been the fruitful source of industrial strife." The new Bill is calculated to intensify these evils, but it has the saving merit of not interfering with the delightful irresponsibility of the Trades Unions. Sir John Wessels has done the community excellent service by drawing attention to the real defect of this sort of organisation, and it is much to be hoped that the Legislature, which practically recognises this defect, will never cease to guard against it.

THE CYFERFONTEIN FIASCO.

In his annual report upon the Klerksdorp Division, the Inspector of Mines for the Krugersdorp Inspectorate, Col. H. Bottomley, remarks: "The mining outlook in this district has not improved during the year; in fact, the position is somewhat worse than it was in 1910, owing to the shutting down of the Africander at the beginning of the year, and the New West Bonanza in December of the year under review. No new discoveries of any importance have been recorded. The Cyferfontein Main Reef fiasco has also doubtless contributed to the loss of confidence in the district." Dealing with the alleged strike of Main Reef at the latter place, Col. Bottomley observes:—"During the year prospecting operations were vigorously prosecuted; the result, however, of such prospecting operations was absolutely negative, the curious point being that not even the reef found in the borehole was located either in sinking or on the outcrop. The depth of the alleged strike was 546 feet from the surface. The effects of this supposed strike were far-reaching for a time. Every available piece of ground within ten miles of the borehole on the supposed strike was taken up, only to be abandoned when the Cyferfontein Syndicate, officially named the Main Reef Exploration Syndicate, with headquarters in Johannesburg, suspended operations and went into liquidation." Another strange circumstance, which Col. Bottomley has not mentioned, is that no explanation was ever given to the public, either by the company concerned or their consulting engineer, of the facts so briefly but incisively put near the end of the penultimate paragraph. The failure to find the reef which was said to have been located in the borehole was indeed curious, and one would have imagined, in view of the various explanations that would be likely to suggest themselves to the unenlightened, though impartial, public, that some effort would have been made on the part of those chiefly concerned to provide the right one. A careful geological investigation of the ground was made by Dr. Corstorphine, and although a great deal of light might have been thrown upon the affair by the publication of this report, the opportunity to make matters clear to some extent was not taken advantage of. Perhaps the renewed attention which has been drawn to the case by the observations of Col. Bottomley will induce the Board to make the position a little more intelligible, even at this somewhat late hour of the day.

FIRST AID ON RAND MINES.

Some weeks ago we published a reference to the competition which it was proposed to hold next month for an ambulance challenge shield presented by the Chemical, Metallurgical and Mining Society for the stimulation of first aid work amongst underground workers. Developments since have necessitated some alterations in the arrangements, and the secretaries have now written to us explaining those changes. Thanks to the Council of the St. John Ambulance Association and to the Transvaal Coal Owners' Association, Ltd., the competition has been considerably enlarged. The former body has been authorised by Mr. E. P. Rathbone to alter the conditions hitherto existing for his challenge shield, and it is now available for a competition confined to surface workers on the mines. For the furtherance of first aid and ambulance work on coal mines, the Coal Owners' Association has presented a shield for competition amongst teams from those engaged on or in the collieries of South Africa. A special feature of the colliery competition will be the use of the safety helmets devised to obviate loss of life in cases similar to that when the late Mr. H. B. Bunkell and others unfortunately lost their lives at Vereeniging some years ago. The Joint Committee, representing the Chemical, Metallurgical and Mining Society and the St. John Ambulance Association, has drawn up rules and conditions for the three competitions, and these, we are informed, will be circulated to those concerned during the course of next week. Owing to a number of ambulance classes on the mines having commenced only recently, it was thought advisable to delay the competitions in order that those who are at present studying first aid might have an opportunity of submitting entries after passing their examinations. It has been provisionally decided to hold the competition for the Rathbone shield (surface workers) on the 8th December; for the Chemical, Metallurgical and Mining Society's shield (underground workers) on the 15th December; and the Coal Owners' Association shield (colliery workers) about the 22nd December. Team entries must be lodged with the secretaries not later than 9th November, and the names of the members of the teams must be sent in not later than the 23rd November, by which time it is anticipated the whole of the local ambulance classes will have completed their examinations. Having provided some small incentive to mine workers to take up first aid and ambulance work, not only as a means of being prepared for emergencies when accidents occur on the mines, but also to increase the numbers of those who can render efficient assistance anywhere and at any time when the services of medical men are unavailable, it is hoped that it will be possible for each mine to enter a full complement of teams for these competitions. Mr. William Cullen is the chairman of the Committee dealing with the matter, and Messrs. Fred. Rowland and C. F. W. Burbury are the joint secretaries.

KNIGHTS DEEP—SIMMER & JACK EAST ABSORPTION.

Advantages of the Scheme—Knights Deep Board Avail Themselves of an Unique Opportunity.

The Knights Deep Board have issued to their shareholders a circular, from which extracts appear below, briefly outlining the scheme under which that company has acquired the South African assets of the now defunct Simmer and Jack East. From the Knights Deep circular to shareholders we learn that in view of the auction of the property of the Simmer and Jack East, Limited, the directors of the Knights Deep have been considering whether it would be to the advantage of their company to acquire the property. After careful investigation their Superintending Engineer has advised them that it was desirable to take steps to obtain the right of doing so. He pointed out that the acquisition of the property and plant would enable the Knights Deep Company to increase its crushing capacity without incurring any appreciable capital expenditure, and that the greater tonnage crushed would tend to insure the maintenance of the present exceptionally low rate of working costs and would, in all probability, render it possible to utilise a large amount of ore from the Simmer and Jack East property which the Simmer and Jack East Company, working as a separate unit and crushing on a smaller basis, find it impossible to treat at a profit. In consequence of this advice the directors approached the Consolidated Goldfields, with the result that a provisional agreement has been entered into with that company (which will be submitted to shareholders for confirmation) by which it advances without interest for a period of twelve months, the necessary money to enable the Knights Deep Company to bid for the property up to a price agreed by the Superintending Engineer. During this period the properties for working purposes are to be practically treated as one, a just proportion of the profits obtained, arrived at after careful calculation, being handed over to the Consolidated Gold Fields in lieu of interest. Within twelve months the Knights Deep Company can either call upon the Consolidated Gold Fields to take over the purchased property in full satisfaction of the advance, or, subject to the consent of the shareholders being obtained, can repay the advance by the issue of 100,000 shares which would have to be created for this purpose. The directors of the Knights Deep consider this arrangement advantageous to their shareholders, seeing it involves practically no capital expenditure, and affords ample opportunity of testing the advantage to be gained before the final acquisition of the Simmer and Jack East property. It was, therefore, decided that a bid should be made for the property, and at the sale by public auction on Thursday, the entire property and assets in the Transvaal, except cash, were acquired by the Knights Deep Company for the sum of £250,000.

The deal in question, as far as the Knights Deep is concerned, is in the nature of an option, and, analysing the terms of the arrangement, it would seem that it is a very favourable one to the Knights Deep. Apart from the obvious economies of combined production, there are in this case peculiar advantages derivable from: (a) The joint reduction works; (b) The economies in surface staff; (c) the longer life; (d) The multiplication of shafts; (e) Greater available tonnage developed. The above mining advantages are quite distinct from the unique and specially favourable terms rendered possible by the support accorded by the parent company. It is understood that the proportion of profits accruing to the Gold Fields will be 2-15ths, and the balance of 13-15ths will go to the Knights Deep. Reading this in the light of the profits earned by the Simmer and Jack East and Knights Deep in the six months from January last up to the date of the recent fire, it will be seen that Knights Deep would have obtained an additional profit of £10,631 for the period, according to the monthly published figures. Obviously, therefore, the economies above referred to under this arrangement should give the Knights Deep correspondingly greater benefit.

Summing up the arrangement, the position is as follows: Knights Deep have one year to work the property on the 2-15ths and 13-15ths basis, as above outlined. Any time during the year Knights Deep have the right to complete the deal and to issue to the Gold Fields 100,000 shares in satisfaction of the loan, when the joint working arrangement would immediately cease, and Knights Deep would then retain the property or call upon the Gold Fields to take it back at cost price. Gold Fields advances Knights Deep the £250,000 for purchase of the property, free of interest. The whole scheme, of course, is subject to ratification by shareholders, which, in view of the excellent bargain made for them by the directors, will doubtless be readily forthcoming.

The River Diggers' Average.

The Inspector of Mines for the south-western area (Col. H. Bottomley), in his annual report, referred to the discovery of the Mooifontein gravels, which are situated fifteen miles away from the Vaal River, as having established at once the fact that other agencies apart from the Vaal River had been instrumental in concentrating the diamondiferous gravel. He further remarked: It is impossible from the returns to accurately gauge the payability of these fields, but, judging from the ever-increasing number of diggers, it is safe to assume that a large number are finding diamonds in quantities which are sufficient to pay them for their trouble. Perhaps the method of calculation which would give the nearest result would be to divide the monthly output by the number of licences issued. The total output for December, 1911, from all diggings in the western Transvaal, as recorded in Government returns, is 6,657 carats, valued at £31,812 (or £5 4s. 6d. per carat). The number of licences issued by the Department for the same period was 2,722, which averages out at £12 15s. 9d. per licence per month. Naturally, this average would only apply in the case of an individual on an extended period of working. There are recorded instances of one man having made several hundreds of pounds in one month, while others have had nothing but blank washings for several weeks. The above averages, when applied to individual diggers, are reduced by the fact that there are frequently several men working as partners on one licence. Taking the average number of men per licence at two, the rate is thus brought down to £6 7s. 10d. per man. The area of unexplored gravel is immense, and with more expert methods of working, which are certain to be evolved in the course of time, and the handling of greater quantities of gravel, the fields on the present basis, have an almost indefinite life. The revenue from diggers' licences during the year 1911 was as follows: January, £77 10s.; February, £273 7s. 6d.; March, £102 10s.; April, £306 13s. 6d.; May, £343 15s.; June, £292 5s.; July, £280 10s.; August, £240 2s. 6d.; September, £686 7s. 3d.; October, £169; November, £636 10s.; and December, £1,265 2s. 6d.—a total of £5,279 12s. 3d.

Prince Albert Goldfields.

The following special resolution was passed at a meeting of shareholders of the Prince Albert Goldfields, Limited, held on the 26th day of August, 1912 and confirmed at a meeting of shareholders held on the 20th day of September, 1912, viz.:—"That the affairs of the Prince Albert Gold Fields, Limited, be placed under voluntary liquidation, in terms of Section 178, Subsection (2), of the Companies Act, No. 25 of 1892."

PROGRESS AT THE CINDERELLA CONSOLIDATED.

A Depth of 2,250 feet Attained in the New Shaft—Overlapping of Strata and Its Effect on Tonnage—Temporary Difficulties being Surmounted—The Great Promise of the Property Unaltered—Large Programme of Expansion in the Near Future.

Few mines have had so much ill-fortune, and have contended with so many difficulties, as the Cinderella Consolidated—the great "Albu" amalgamation on the East Rand, which is destined to become one of the leading producers on the Witwatersrand within the next few years.

A Sequence of Misfortunes.

Last year the company had to face a bitter disappointment when the East Rand Proprietary Mines announced their decision of suspending all work in the Angelo Deep section of that property, when only 200 feet remained to be driven to complete connection between the Cinderella shaft and the East Rand Proprietary. The project of a second outlet from this source thus being negatived, and the company being threatened by the Single Outlet Committee with an order for closing down all mining operations on the property, the management immediately commenced the alternative plan of extending the 3,000 ft. level westwards to effect connection with the Cason shaft, a distance of over 1,100 feet from the extreme point reached on that level. A splendid driving performance was achieved, the desired connection being established in five months. It then appeared that the Cinderella would be able to reap a certain benefit from the hard work done during the preceding few years. At the end of last year the company had three-quarters of a million tons of "pay" ore in reserve, and the present plant of 100 heavy stamps, three tube mills, and cyanide works, etc., with a capacity of 22,000 tons per month, was expected to be working up to the full limit of its tonnage at an early date. In the first quarter of the current year 47,240 tons were milled for a profit of £8,058, and in the following three months 55,478 tons were crushed for an earning of £16,121. The July and August operations gave, however, very disappointing results. In the first of these months 17,760 tons were milled for a profit of only £104, and in August the earning was but little better (£339) from a slightly less tonnage. The poor recovery and small profit disclosed were the direct consequences of "air blasts," which caused a temporary suspension of operations in six high-grade stopes. This affected the August operations as well as those for July. The stope faces affected were, however, "recovered" some little time ago, the underground workings were again made "normal," and the grade re-established. As a result, the revenue and profit for the current month are expected to show a large improvement, and it is also very satisfactory to learn that an increasing number of new stopes of good average grade will be available from next month onwards.

Extensive Faulting on the Fifth Level.

It is, however, somewhat doubtful as to when the company will be able to mill ore up to the maximum capacity of the present plant. It appears that extensive faulting has been encountered on the fifth level, which has further disorganised underground work. Both the upper and lower portions of the mine have been expected to contribute 13,000 tons per month, but whereas the top levels are yielding their quota, the bottom workings are giving from only 3,000 to 4,000 tons per month. This faulting, although it is at present a hindrance to mining operations, is in reality a very decided "bull" point rather than a "bear." The stratigraphical disturbance has resulted in considerable overlapping, with the result that the tonnage per claim actually recoverable from this portion of the mine will be substantially in excess of what has been calculated on hitherto.

Sinking Progress in the New Shaft.

A further disappointment has been the comparatively slow progress attained in sinking the new Central Shaft, which is situated 4,800 feet to the east of the Cinderella headgear, and is to become the chief point in the company's programme of exploitation. This shaft has been sunk to a depth of about 2,250 feet, and has probably a further 700 feet or so to go before the reef is intersected. After this shaft has reached the reef horizon an incline will be carried down to meet the lower levels driven eastwards from the existing main Cinderella incline. This shaft is of the very highest importance to the company, because it will not only serve to develop the central section of the company's mining area, but will constitute a means whereby development and hoisting operations can be facilitated throughout the whole of the property. A little while ago it was anticipated officially that this shaft would intersect the Main Reef series towards the end of the current year. In this connection, however, it should be pointed out that whereas the normal rate of sinking is about 140 feet per month, in the June quarter only 149 feet were sunk. It was officially announced: "The small footage accomplished during the quarter is due to the very great difficulties encountered; the ground passed through required the greatest care in close timbering, whilst it was not until the end of the quarter that there was any appreciable diminution in the quantity of water met with. Permanent pumps have been installed at the 1,000 feet pump chamber, and the work of cutting the pump chamber at 2,000 feet horizon has been commenced. Good progress was made with the erection of the mechanical portion of the No. 2 Electric Winder at the Cinderella Shaft." In the month of July 60 feet were sunk and in August 105 feet, whilst this month the sinking is expected to amount to 120 feet, and next month and thereafter 140 feet per month should be achieved. The pump station at the 2,000 feet level is not likely to be completed for some little time. A temporary pumping arrangement has been made, and the arrival of certain portions of new plant is awaited before the full size of the pump chamber is cut.

The New Era.

When this shaft strikes the reef the beginning of a new and important epoch in the history of the Cinderella Consolidated will commence. So far the property has had to be operated on a very cramped basis, and intersection of reef in the central section will be the preliminary signal for a policy of much more vigorous development than has so far been possible, followed at a later date by a substantial increase in the reduction and treatment plants. The difficulties encountered by the company, although they have resulted in disappointing returns, are, it is hardly necessary to state, merely of a temporary nature. In a few months' time development will be proceeding from the new shaft, and throughout the underground workings more favourable conditions will obtain. The intrinsic value and great potentiality of this mine remain unaffected by the troubles of the past few months, and the day is not now far distant when the directors will be enabled to proceed with the development of this 2,100 claim property on lines which, for a variety of reasons, have so far been denied to them.

Transvaal Gold Mining Estates: Dividend Declared.

The directors of the Transvaal Gold Mining Estates notify the declaration of a dividend (No. 13) of 17½ per cent. (3s. 6d. per share), payable to shareholders registered on the 30th September. The dividend will be payable on or about November 5th. The amount to be distributed is £105,739.

THE COST OF TIN PRODUCTION.

A Comparative Review of Rooiberg and Zaaiplaats Charges—Expenditure on Realisation and General Charges Accounts—Alluvial Mining in Swaziland.

For the year ended June 30th, 1912, the Rooiberg Minerals Development Company, Ltd., milled 20,799 tons of ore and recovered 884·58 short tons of concentrates, of an average grade of 67·89 per cent. metallic tin, at a total cost, exclusive of development, exploration, and shaft sinking, of £52,346 18s. 5d., or £2 10s. 4d. per ton milled. During the twelve months ended July 31st, 1912, the Zaaiplaats Tin Mining Company, Ltd., milled 29,330 tons of ore and recovered 1,647 tons of concentrates, of an average value of 67 per cent. tin, at a total cost of £50,022 12s. 11d., or £1 14s. 1d. per ton. milled. The following statements, taken from the annual reports of the companies concerned, show the distribution of the various items of cost :—

	Rooiberg.			Zaaiplaats.		
	Total.	Per Ton Milled. s.	d.	Total.	Per Ton Milled. s.	d.
Mining	£11,688	11	3	£20,315	13	11
Transport, sorting and crushing	1,054	3	11	1,959	1	4
Milling and concentrating	10,038	9	8	15,047	10	3
Tin drying and bagging	2,310	2	2	743	0	6
Realisation charges ...	11,768	11	1	9,219	6	3
General charges, mine, head office, & London	12,488	12	0	2,739	1	10
	£52,346	50	4	£50,022	34	1

The divisions are those of the Rooiberg report. A very close comparison of these figures cannot be made by reason of the fact that the items do not in each case cover the same operations. For instance, the sum of £1,959 in the Zaaiplaats statement does not, apparently, cover the cost of crushing; neither is anything said about bagging, in the same account, and it is possible that this item is included in the realisation charges. Broadly, however, some sort of comparison may be made by those who are accustomed to tin mining accounts.

Two features that are somewhat prominent at a glance, in these statements, are the cost of realisation and that accruing to general expenditure, and it will be perceived that the great difference which is shown between the average cost of the two mines is due almost entirely to the expenses under these heads. At Rooiberg the amount debited to general charges is divided into mine, £8,548, and head and London offices, £3,940; while at Zaaiplaats the sum of £2,190 includes head office expenses, leaving an amount of £549 to cover the London office. These matters of realisation and general charges can only be explained by the companies concerned, of course; the other items, such as mining, milling and the rest are easily understood by those who are more or less acquainted with the conditions at the two mines. The aggregate cost of mining, transport, sorting, crushing, milling and concentrating, it may be remarked, is pretty much the same in each case, and stands at about 25s. per ton milled. The average assay value of the mill pulp is stated, in the Rooiberg report, to have been 4·943 per cent. metallic tin, and the extraction 57·97 per cent., or equivalent to 2·86 per cent. metallic tin. No information is given in the Zaaiplaats report with regard to the mill pulp value, but the average yield of metal per ton milled was 3·76 per cent. Assuming an extraction of, say, 60 per cent., the original value would have been 6·27 per cent. The working profit per ton milled at Zaaiplaats, on the basis of the working costs given above, was £3 12s. 11d., and at Rooiberg £2 11s. 3d.

GROENFONTEIN.

It is rather to be regretted that the last annual report of the Transvaal Consolidated Lands omits a statement which was one of the most interesting features of previous reports. No detailed information is given, that is to say, regarding the distribution of the various items of the working cost. This circumstance is doubtless due to the fact that the tin occurrences were greatly impoverished and there was difficulty in finding enough ore to cover current expenditure. Only 10,041 tons were treated, the output being 360·172 short tons of concentrates of a value of 67·73 per cent., the value of the yield being 2·42 per cent. metallic tin per ton milled. The statement of expenditure for 1910 on a crushing of 12,161 short tons, and a recovery of 886·18 tons of concentrates was :—

	Total.	Per Ton Milled s.	d.
Mining	£19,501	32	1
Transport	2,366	3	11
Milling and concentrating	9,097	14	4
Elmore Plant	1,396	2	4
Drying and bagging	1,147	2	5
Maintenance	717	1	2
General charges	4,277	7	0
	£38,804	63	10

The concentrates carried 70·87 per cent. tin, and the average yield of the ore was 5·04 per cent. metallic tin. It would be hardly fair to make a comparison between these costs and those quoted above, perhaps, because it is to be assumed that some of the items would have been less in 1911 if conditions had not become more difficult. The high cost of mining, however, may be explained as due to the very scattered and irregular character of the workings as compared with those at the other properties under discussion, and the same explanation may be made to serve for the item of transport. The milling and concentrating charges would probably have been reduced. The running of the Elmore plant, it will be observed, put another 2s. 4d. on to the total working cost.

SWAZILAND TIN.

The report of the Swaziland Tin, Ltd., for the year ended the 30th June, 1912, which was presented to shareholders at the meeting on the 20th inst., enables us to give some interesting information in connection with the alluvial operations of this company in Swaziland. The work is carried on by means of monitors, and to some extent by hand mining, the tailings being discharged by hydraulic elevators. The consulting engineer, Mr. J. Jervis Garrard, remarks: "The introduction of hydraulic elevators during the year has undoubtedly been the means of enabling certain low-lying flats to be work, which, under the former system of mining, could not possibly have been dealt with. As, however, these elevators require for their operation over 60 per cent. of the total available water, and, moreover, that portion of the available water which is under the highest pressure, it is evident that, if the elevating of the gravel can be done without using water, and if the water so saved is applied instead to the breaking of ground by being used in monitors, the output in the case of workings now using elevators should be increased proportionately so as to amount to not less than two and a half times what it is now. It is consequently proposed to accomplish the work of elevating by means of centrifugal gravel pumps driven by direct coupled motors deriving their power from a generating station which in turn will derive its power from water which has already done work in breaking ground at the upper portions of the property, and which after being settled will be led by means of fluming and pipes to a Pelton water wheel direct coupled to the electric generator, which will supply the necessary power to the proposed gravel pumps. At the same time, this water, after having done its work in generating this power, will again be caught up and [illegible] in augmenting the present supply for the lower-lying workings at Stable [illegible]. The work of breaking ground is [illegible] being done under disadvantageous conditions, and this difficulty has been increased by the abnormally dry season which was experienced [illegible]. The following

figures, which are a welcome addition to the report, give detailed information with regard to production which we endeavoured to supply roughly last year. They represent the productions and cost of operating at the various creeks during the year under review:—

Creeks.	Tons of Concentrates Produced.	Total Cost of Production.	Cost per Ton.
Kings Flat	59·387	£2,829 13 4	£47 12 11·499
Rowley Creek	4·791	166 9 10	34 15 0·221
Duncombe Creek ...	8·758	301 7 9	34 8 3·077
Sanders Creek ...	55·880	1,263 19 7	22 12 4·686
Bailey Creek ...	17·415	784 7 8	45 0 9·761
Ryan Creek	4·73	29 7 10	62 2 9·319
Mbabane Flats ...	5·969	559 8 9	93 14 5·717
Stable Creek ...	83·845	2,877 15 11	34 6 5·473
Foys Creek	44·142	1,898 14 0	43 0 3·229
Totals and averages	280·660	£10,711 4 8	£39 11 9·240

The 280·66 tons of concentrates won were dressed to 228·806 tons, resulting in a loss of 51·854 tons, or 18·475 per cent. in dressing. The number of natives employed is about 300. The working costs are detailed as follows:—

		Cost per Ton Shipped.
Mining and sluicing	£10,970 11 7	£47 19 0·8
Ore concentration	666 10 2	2 18 3·2
General expenses—mine and head offices	6,540 4 4	28 11 9·0
Export charges	1,171 3 5	5 2 4·6
Working costs	£19,348 9 6	£84 11 5·7

No statement is made with regard to the average value of the ground treated.

AFRICA'S MOST FULLY-DEVELOPED MINES.

Twenty-nine Mines with Over a Million Tons of Ore Reserves—Aggregate Value Exceeds Gold Output of the World in 1911.

We give below a table setting forth the names, localities, aggregate payable tonnages and average values of these tonnages of the gold mines in Africa, in which the ore reserves amount to one million tons and over. It will be noted that in all twenty-nine mines qualify for inclusion in this list. Of these, fourteen are situated on the central tract of the Witwatersrand, ten on the East Rand, three on the West Rand, and two in Southern Rhodesia. The total amount of payable ore blocked out in these twenty-nine mines, according to the latest reports, stands at 71,153,587 tons of an average recovery of about 30s. per ton, so that the value of the gold contained in these blocked out tonnages may be estimated at no less than £106,700,000, or nine and a half million pounds more than the gold output of the world last year. A few months ago we printed a table of Rand ore reserves standing developed in the various mines at the end of last year. The accompanying schedule to a large degree is based on the figures contained in that table, but the statistics have where possible been brought right up to date, and the value and interest of the compilation have been increased by the inclusion of figures for the two most fully developed mines in Southern Rhodesia, a country which until recently was unable to record any very spectacular figures in regard to ore in reserve:—

	Tons.	Value, dwts.
Crown Mines (Central Rand)	10,124,072	7·25
East Rand Proprietary (East Rand) ...	6,716,605	6·9
Randfontein Central (West Rand) ...	5,658,859	7·24
New Modderfontein (East Rand)	4,067,000	8
Rose Deep (East Rand)	3,670,160	6
Robinson (Central Rand)	2,833,794	11·4 & 4·2
Simmer and Jack (Central Rand) ...	2,680,000	6·2
Modder B. (East Rand)	2,355,700	7·5
Geldenhuis Deep (Central Rand)	2,262,840	6·2
Ferreira Deep (Central Rand)	2,162,411*	9†
Village Deep (Central Rand)	2,159,792	6·1
Shamva (Southern Rhodesia)	2,141,992	5†
City Deep (Central Rand)	2,078,805	8·1
Nourse Mines (Central Rand)	2,050,705	6·6
Brakpan Mines (East Rand)	1,925,346	6·73
Van Ryn (East Rand)	1,655,910	6·37
Knights Deep (East Rand)	1,650,000	5·2
Consolidated Langlaagte (Central Rand)	1,619,647	6·7
Witwatersrand Deep (East Rand) ...	1,436,202	6·79
Village Main Reef (Central Rand) ...	1,418,754	8·85
Simmer Deep (Central Rand)	1,312,000	4·9
Durban Roodepoort Deep (West Rand)	1,288,071	6·8
Langlaagte Estate (Central Rand) ...	1,281,307	—
Witwatersrand (East Rand)	1,225,084	5·65
New Kleinfontein (East Rand)	1,146,531	7·49
Robinson Deep (Central Rand)	1,140,000	7·2
Jupiter (Central Rand)	1,089,000	5·74
West Rand Cons. (West Rand)	1,003,000	5·25
Cam and Motor (Southern Rhodesia) ...	1,000,000†	11†

*Total of reserves of Ferreira and Ferreira Deep at December 31st, 1911. †Approximate.

De Kaap's Gold Returns.

Public attention being again directed to the De Kaap Gold Fields, says Mr Cabell Sheppard in the *Star* of the 17th inst., the accompanying statement of gold returns, taken from the published records for the eighteen months ended the 30th of June last, of the Mines Department, to which records access was kindly accorded to me by the courtesy of the local Mining Commissioner, will, I believe, prove to be of considerable interest to many readers. It will be noted that the Barberton District has thirteen concerns contributing to the output just now, yet out of that limited number only four allow their returns to be published. This "conspiracy of silence" will have to be broken, as much development that has been proceeding for years past has reached such a stage that it will shortly speak for itself. The prophecies of experts, who through a series of years have been called in at odd times to report on several properties here, make strange reading to-day in the light of those stubborn things, facts. Among the mines condemned by these gentlemen are to be found Sheba, Consort, Worcester, New Fortuna, Rosetta and Alpine. Still, all these figure in the list of regular contributors. If to the output for the past eighteen months, 138,620 ozs., value £588,826, are added the returns for same periods of our neighbouring gold fields of Pilgrim's Rest, 224,200 ozs., value £943,864, making a total of 362,820 ozs. value £1,532,690, it proves that from this corner of the Transvaal we are showing a monthly average of 20,156 ozs., valued at £85,150. The following is a condensed form of the returns referred to above, viz.:—Average number of mines declaring, 14; average number of stamps dropping, 277; total tonnage treated by stamps and tube mills: amalgamation, 355,699; direct cyaniding, 40,994; direct cyaniding by other appliances, 14,515; total tonnage 141,208. To this is added the gold contents of ore shipped, of tailings of reef and alluvial diggers, and all miscellaneous sources, aggregating in all 138,620 ozs., valued at £588,826.

THE DIAMOND DIGGINGS.

A New Discovery near Barkly West—Mooifontein a Scene of Desolation—Good Finds Around Bloemhof Township.

The continued demand for diamonds, and especially stones of good quality, maintains a large population of diggers in the South-Western Transvaal and North-Western Cape Colony along the Vaal River and also at the "dry diggings." There has just been made a new and important discovery in Barkly West District, and in the Bloemhof Fields diggers are very active despite the virtual exhaustion of some of the most popular fields of the past.

The Decline of Mooifontein.

Mooifontein, the famous alluvial farm in the Bloemhof District which attracted such a large number of diggers a few months ago, is in a state of rapid decline, and since April last there has been a steady exodus of diggers to other fields, to Bloemhof, to Barkly West, to Rietput, and other areas. Mooifontein of to-day presents a very different appearance to the Mooifontein of December last, when three or four thousand people had established a city of tin and canvas, and digging and washing operations were proceeding on all sides. It looks as if within the next month or two Mooifontein will completely be abandoned. This field, so busy and active a short while ago, now presents a scene of woeful desolation, and has been described as taking on the appearance of "an isolated graveyard with the dead exhumed and removed and the graves left uncovered and uncared for." It is officially acknowledged that unless fresh finds are quickly made Mooifontein will completely be a thing of the past at an early date, and admittedly the prospect of any really valuable new runs being discovered after all the prospecting that has proceeded is not by any means a good one. The fate of London, another farm, situated 25 miles from Bloemhof, which loomed up large in the public view at the end of last year, is no better than that of Mooifontein. London, in fact, never attracted a real "rush" of diggers, and it appears that the majority of the few who were attracted by its possibilities have migrated to other fields. Numerous other farms in the Bloemhof District are known to be gem-bearing, and much disappointment has been expressed that the Government has not yet seen fit to proclaim Avondster and Blesbokfontein, two areas which, it is believed, would enable a large number of diggers to earn a fair livelihood.

Bloemhof and Rietput.

Meanwhile extensive digging operations are proceeding in the immediate neighbourhood of the township of Bloemhof. The latest "rush" is to some diggings on the northern portion of the town and almost on the road to Schweizer-Reneke. There are about 100 diggers at work here, and several goods finds are reported. Some of the diggers on the Bloemhof commonage, too, are getting satisfactory results, and the local diamond buyers are very busy. Amongst other recent discoveries on the commonage has been a beautiful 20-carat stone valued at £25 per carat. At Rietput a large number of diggers are reported to be finding well, and the outlook is spoken of as being very satisfactory. Last week a considerable number of stones were found, the largest being a 16-carat piece of cleavage. Native labour is scarce, but the majority of the Rietput diggers are stated to be more than paying expenses.

The Barkly West Discovery.

A somewhat remarkable diamond-bearing occurrence has recently been found on the Barkly Commonage, crossing the "Outspan," and running in a north-east and south-west direction. The "belt," which is only two feet in width, has been opened up at several points over a distance of a mile. The deposit is described as a shut containing yellow diamondiferous ground, which old diggers declare to be similar in every respect to the yellow ground in the Kimberley Mine.

The top soil has been worked for alluvial, and, curiously enough, the diamonds found in the ground beneath are said to be identical with river stones. Some of the diggers hold the theory that this fissure (such it presumably is) runs right on to Mayer's Prospect, on Harrisdale and Droogevelt, of the New Vaal River Estates. Whether there are any grounds for this belief or not we cannot say, but the fact remains that Barkly West is much excited over the new find. Numbers of diamonds have been discovered and claims have been pegged out along the full proved extent of the fissure. Efforts are being made to trace the fissure, with a view to the discovery of its source—"the hoped-for mine, the fabulously wealthy source of the alluvial diggings which Rhodes at one time thought would be discovered on the River Diggings," as a local paper has it. Several other interesting developments are taking place in the Barkly West District at present.

Droogevelt, the May and the Phœnix.

On Droogevelt, for instance, a local syndicate has been finding exceedingly well in a rich alluvial shift. It is reported that diamonds of a total value of £3,000 were taken out in the first week's operations. On Holsdam, too, some excellent discoveries are said to have been made. The May Mine is being further prospected in a small way by a private Kimberley syndicate. Shafts have been sunk outside the area previously explored and promising-looking ground has been encountered. One of these shafts has been sunk to a depth of 10 feet, and a drive carried in from it for 10 feet, from which several diamonds have been recovered. Ground from an old paddock put through a small rotary pan has yielded nearly 100 carats of diamonds, including one very fine "fancy" stone of 23½ carats, valued at about £80 per carat. On the other side of the railway, from the May, the old Phœnix Mine, acquired some little time ago by a Natal syndicate, has been closed down as a larger quantity of water than the syndicate are capable of coping with has been encountered. Taken altogether, it would seem that a wave of activity is passing over the Barkly West area and that two or three highly interesting discoveries recently have been made there.

To Help the "Small Man."

During the recent tours of the Minister for Mines of West Australia the necessity became apparent for giving crushing facilities at State batteries, by which the many bodies of low-grade ore known to exist throughout the Westralian fields could be brought into the sphere of profitable production. As the key to cheaper treatment is continuous crushing, and the State cannot well be expected to further enlarge its losses upon the operations of State batteries, the endeavour has been to devise a scheme which would induce the prospector to keep the mills more fully supplied with ore for treatment. If State mills were kept running full time, working costs could be still further reduced, and the benefits thus obtained be returned to the prospector in the shape of reduced costs. In the hope of supplying an inducement, the Minister has now approved of the following rebate for the treatment of low grade ore:—A rebate of 2s. per ton will be made on the ordinary charges per ton on all low-grade ore crushed at any State battery, when not less than 1,000 tons are crushed in one continuous run of the plant. We wonder if Mr Malan in his recent tour heard anything of the needs of the "small man" in South Africa.

THE RAND IN 1912.

Remarkable Uniformity in Recovery Grade—Rock of Higher Stoping Value Indicated—Improved Profits for the First Eight Months.

Those who anticipated that the effect of the abolition of gold reserves in March last would be the appearance of a notable degree of variation in the monthly returns of the Rand will doubtless be interested in the figures which appear in the following statement. Without looking back over the records of past years, we feel confident in stating that no more uniform series of recovery values, declared over a period of eight months, to take the whole time covered by the figures presented, have ever been recorded in the pages of the Chamber of Mines analyses. Quite a cursory examination is sufficient to show, moreover, that the greatest degree of uniformity is that which is displayed during the past five months, that is, since the practice of keeping gold reserves was abandoned.

1912.	Tons Milled.	Recovery per Ton Milled.	Working Cost per Ton Milled.	Working Profit per Ton Milled.
January	2,067,161	27/6	18/10	8/11
February ...	1,980,396	28/3	19/ 2	9/ 2
March	2,163,998	28/1	18/11	9/ 0
April	2,059,562	28/6	19/ 0	9/ 8
May	2,177,348	28/6	18/ 9	9/10
June	2,110,657	28/5	18/ 6	10/ 1
July	2,149,785	28/6	18/ 8	9/11
August	2,121,455	28/9	18/10	10/ 0

Since the beginning of the year the milling duty has increased 3·6 per cent., and the percentage of sorting about 5 per cent., so that the slight gain in sorting can scarcely be said to have produced the results which appear in the first column of the tabulated statement. There is also to be remarked a decided improvement in the grade as compared with last year. A recovery value of 28s. and over was only recorded twice in 1911, in the months of January and February, namely, the first month showing 28s. exactly and the second 28s. 6d. per ton milled. The next highest figure was 27s. 10d., which was reached in December last. Again, without referring to last year's analyses, we believe we are correct in stating that the average sorting for the eight months of 1912 has not been higher than that for the same period last year, so that the only conclusion to be arrived at is that the mines have been milling a higher grade of ore lately. This view seems to be borne out to some extent by the working cost returns. The highest amount under this heading during 1911 was 18s. 5d. for December, the average for the year being 18s. There is no evidence to show that cleaner stoping is responsible for this condition of things, since the sorting percentages of this year are too indefinite, and there is an increase in the stamp duty which one would not expect to find if "closer" mining had been adopted to any notable extent.

Working Profits Unimproved.

The working profits per ton milled for this year, although apparently on the upward grade, are not on the average higher than they were in 1911, when the figure for the whole twelve months worked out at 9s. 7d. per ton milled. The average of the costs quoted in the accompanying table is, as a matter of fact, very slightly less than this. The total Witwatersrand working profits for the years 1911 and 1912 are set forth below:—

	1911.	1912.
January	£930,059	£997,557
February	874,612	907,192
March	949,415	1,204,764
April	971,858	1,005,920
May	956,823	1,073,534
June	960,381	1,063,634
July	969,687	1,061,089
August	967,457	1,055,315
September	952,665	—
October	948,278	—
November	965,720	—
December	967,897	—

Owing to the increase in the tonnage milled the total profits for the corresponding eight months of 1911 and 1912 are £7,580,292 and £8,369,005, a difference in favour of the latter period of £788,713.

DIAMOND MINING LABOUR STATISTICS.

Details of Employment Offered by De Beers and the River Diggings.

The report of the Union Department of Mines for 1911 as to the labour employed in diamond winning in the Cape Province for that year evidences the importance of the industry as a source of employment. In the mines 2,706 whites and 13,740 natives and coloureds were employed in December, 1911, and in addition there were estimated to be 1,224 whites and 8,563 coloureds working on the alluvial diggings. The figures for the mines show an increase of 77 whites and 1,899 coloureds, as compared with the previous December. Practically all the labour referred to was absorbed by the De Beers mines, their proportion of the total being 98·6 per cent. in December. The above figures mean the circulation of £1,481,812 in the form of wages alone. In regard to the number of whites for whom the diamond mines provide employment, 51 per cent. are of South African birth, and 14 per cent. were born in the United Kingdom. The employment offered by the alluvial diggings is not of a permanent character, as in the case of the mines, but the figures for the alluvial diggings are also a factor, particularly as regards the native labour problem. In the division of Barkly West during 1911 the monthly average number of claim-holders was 1,123. These employed, approximately, a monthly average of 6,700 labourers at an average wage per labourer of 10s. per week without food. There has been a great shortage of labour throughout the year. It may be of interest to note that 5,801 quarterly miners' certificates were taken out, 1,697 alluvial claim licences at 10s. each, 23,004 alluvial claim licences at 5s. each, and 1,978 claim licences (reserved river claims) were registered during the year. These figures do not include the claims in mines in this district, for which 7,500 licences at 10s. each were issued. The chief digging centres were Hebron, Klipdrift, Good Hope, Gong-Gong, Winter's Rush, Longlands, Scholtz Prospect, Waldeck's Plant, and Delport's Hope. Most of the work done was in the red shallow alluvial, although the deep alluvial at Hebron, Gong-Gong, Waldeck's Plant, Winter's Rush, and Delport's Hope attracted a deal of attention.

IS THE STAMP MILL DOOMED?

A Bold London Statement—Advantages of the "Crudest Machine Ever Invented."

For many years the displacement of the stamp battery by other forms of crushing machinery has been spoken of. Quite a quarter of a century ago critics of metallurgical engineering predicted the speedy demise of the heavy, costly and cumbersome gravitation stamp and the substitution of rolls or some similar form of ore reducing appliance in place thereof. But the stamp battery, despite all prophecies and the evolution of new metallurgical methods, has maintained its place as the predominant factor in the majority of equipments. It is true that the functions of the stamp head have changed greatly of recent years. It is to-day more of an intermediary between the rock breakers and tube mills than a prime ore reducing agent. Nevertheless it is such a tremendously efficient and important agent that, despite its first cost and its cumbersome dimensions and weight, it is still the milling agent par excellence. We have on several occasions alluded to the competition of other appliances with the gravitation stamp battery. Our references have been prompted by expressions of opinion which have been ventured by engineers, metallurgists and others, but hitherto nothing very definite has been stated. In the September issue of *African Engineering*, to hand by this mail, however, there appears a remarkably bold statement, which we must contess appears to be woefully in conflict with facts and probabilities. The article is entitled "The Doom of the Stamp Battery," and is based on the address delivered by Mr. James Yule, the newly-appointed President of the Institution of Engineers, delivered in Johannesburg a few weeks ago. Our contemporary remarks: "Among other things, he hinted that the time is not far distant when the present antiquated stamp mill will be substituted by crushing rolls." Mr. Yule is not the first to "hint" at such a change in the nebulous future, but *African Engineering* is certainly the first generally well-informed journal to make such a sweeping assertion as is contained in the concluding portion of the article in question, wherein it is stated: "It is safe to prophesy that the last big stamp mill has been ordered as far as gold mining is concerned, and that the next revival in the machinery trade with South Africa will take the form of orders for crushing rolls, stone breakers, tube mills, and electric prime movers. At the central power stations the internal combustion engine is likely to be adopted, as the recent successes with semi-bituminous gas plants have been most encouraging. This is the time of the passing of the steam engine, and with it will pass the stamp mill." We are here principally concerned with the death warrant of the stamp mill; admittedly electricity and internal combustion engines gradually are ousting the steam engine from a position of supremacy held for a century. Not for one moment do we believe that the last stamp mill has been ordered for gold mining. Just recently the Shamva Mines and the Van Ryn Deep have each ordered large milling installations. In the case of the Rhodesian mine, Nissen stamps will be employed, whilst the Van Ryn Deep will for a start be equipped with 80 ordinary gravitation stamps. We quite believe that when the time arrives for the equipment of other large mines on the Further East Rand, further stamp batteries will be purchased. No such sudden reversal of opinion in regard to the gravity head, as is predicted by *African Engineering*, is, we are assured, likely. It is one thing to "hint" at revolutionary methods and quite another to state that the old ways and means have for ever passed into the realm of the antique. Our contemporary pays the Witwatersrand a high compliment when it states: "It is only three years since it was shown that electricity produced at central stations and metered out to the various mines would save about 1s. per ton. The steam plants then in vogue on the Rand were the finest and most economical in the world, and already they are replaced by the new force. It is not to be supposed that the men who did this will allow the crudest machine ever invented to stand in the way of progress when its primary functions are no longer performed." It is good to learn that we are considered a progressive people, but there has always been a strong and highly desirable admixture of the conservative blended with our radicalism in regard to machinery and methods. Engineers and metallurgists on the Rand have yet to be convinced that "the crudest machine ever invented" has not great advantages over more enlightened structures in such vital matters as cost of operation, capacity and fine adjustment to the latest metallurgical demands. It is significant that in the second volume of "A Text-Book of Rand Metallurgical Practice," the latest work on the subject, written by experts, Mr. C. O. Schmitt, in dealing with the design and construction of reduction plants, makes no mention whatever of crushing rolls. Possibly this is a serious omission on the part of Mr. Schmitt, but the view we take is that his treatment of the subject is admirably practicable and would lose in value by theorising on the possible value of primary crushing machines other than gravitation stamps, of which the name is legion. Not a few of these have at one time and another been tried on the Witwatersrand, but not one of them has as yet seriously disputed the supremacy of the stamp battery.

We are not at variance with our contemporary in its endorsement of Mr. Yule's practical review of what has been achieved on the Rand and of the new President's rational discussion of the probable improvements in the cyanidation of the immediate future. Inaugural and valedictory after-dinner speeches of the chairmen of technical societies are always supposed to be interesting and to contain some expression of novel thought; otherwise they are deemed dry and disappointing. But Mr. Yule wisely refrained from going further than "hinting" at things which may come to pass, whereas our London contemporary has erected a tombstone to one of the most vital integral parts of Rand industry. No doubt in the fulness of time appliances other than gravitation stamps will be the primary crushing machines for Rand ore, but we believe the day of the dismissal of the stamp is far distant. Perhaps the time will come when conglomerate will be disintegrated by the direct application of electric force and drought will be dissipated by immense aerial watercarts. But for the present we must accept the crudity of the gravity stamp, which has stood the test of time and has many great advantages as well as a host of imperfections.

TO CONTRIBUTORS.

The Editor invites Contributions on any subject of interest relating to mining and other industries of South and Central Africa, as also of suitable non-copyright photographs or snapshots of mining or engineering interest. Subject to special arrangement, the scale of remuneration for all articles inserted is at the rate of Two Guineas per page, and 5/- for every photograph. No responsibility can be accepted for safe transmission, but anything that may be submitted that is not accepted will be returned if a stamped and directed envelope is enclosed for the purpose.

Mr. Samuel Evans leaves shortly on a trip round the world.

* * * *

Mr. H. C. Behr, who has retired from the position of consulting mechanical engineer to the Consolidated Gold Fields, leaves the Rand on Monday next. During the week Mr. Behr has been the recipient of numerous expressions of regret at his approaching departure from his many friends on the Rand. It is understood that, after a holiday, Mr. Behr will rejoin the American offices of the Consolidated Goldfields in an advisory capacity.

STATE AID TO MINING: WESTRALIA'S EXAMPLE.

Details of a Year's Work.

From the annual report of the Westralia Department of Mines we take the following:—

State Batteries.—The number of State batteries existing at the close of the year was 33, as compared with 34 during 1910, the 10-head mill at Kalpini having been dismantled and removed to Linden for re-erection to take the place of the Unit stamp. From the inception of the battery system to the end of 1911, gold and tin, to the value of £3,733,939, have been recovered at the State plants. 843,780 tons of gold ore were treated, and produced £3,146,990 worth of gold by amalgamation; £429,274 worth by cyanidation; £88,974 from slime treatment, and 51,553 tons of tin ore produced tin to the value of £68,701. During the year the gold ore treated was 59,373 tons for 56,265 fine ounces, and in the preceding year, 89,278 tons produced 80,074 fine ounces. The working expenditure for all plants during the year totalled £60,061 11s. 5d., and the revenue £53,321 19s. 5d., which, after including £750 17s. 6d. for additions, etc., and paid from revenue, shows a loss of £7,490 9s. 6d. on the year's operations. The capital expenditure from the inception of the scheme was £290,732 13s. 8d., £91,981 1s. 8d. being paid from revenue and £198,751 12s. from loan. The cost of administration for the year was £3,764 3s. 10d., as against £3,891 16s. 8d. for 1910. The working expenditure from inception to the 31st December, 1911, exceeds the receipts by £28,870 8s. 2d.

Geological Survey.

The work of this branch of the Department has been carried out during the year by 19 officers, who have been kept fully occupied. The principal reports as a consequence of the year's operations are on—The question of permitting mining on the Water Reserve at Garden Gully, near Meekatharra; the underground water resources of the belt of wheat-growing country lying to the south of Norseman; the underground water supply at Rottnest; boring for coal at Eradu; the selection of sites for boring at Cue; the limestone deposits at Pinjarra; the operations for boring for coal on the Fitzgerald River; the supposed coal finds at Donnybrook; the location of suitable sites for boring with the object of locating auriferous ore channels in the Coolgardie district; a supposed asbestos discovery at Golden Valley in the Yilgarn Goldfield; the boring for artesian water at Cookernup. Numerous reports were also furnished in connection with applications for the alienation of mineral lands, and for assistance to mines under the provisions of the Mining Development Act. The staff was increased during the year by the appointment of three field geologists, one assistant field geologist, a petrologist, and an assistant mineralogist and assayer. One geological bulletin was issued, and seven more will be in the hands of the printer early in the coming year.

Assistance Under the Mining Development Act, 1902.

The following statement shows the sums advanced during the year 1911 under the provisions of the Mining Development Act:

Advances in aid of mining work and equipment of mines with machinery	£1,654	5	11
Advances in aid of erection and equipment of crushing plants, including subsidies paid on stone crushed for the public ...	3,297	3	2
Advances in aid of boring	1,141	11	4
Providing means of transport	281	14	1
	£6,374	14	6

In addition to the above, amounts totalling £2,144 3s. 9d. were expended from the Mining Development Vote on various matters for the assistance of mining, such as water supply, roads, subsidies to assist cartage of ore long distances, and subsidies for development work done below the 100ft. level in small mines. Included in the amount set against advances in aid of erection, etc., is the sum of £942 18s. 5d., being the subsidies paid to the owners of plants crushing for the public, the conditions being that they crush for the public at fixed rates, in most cases a further requirement being imposed as to treating or purchasing tailings. The ore crushed at such plants during the year amounted to 11,161 tons. The receipts under the Mining Development Act, exclusive of interest payments, amounted to £2,966 12s. 10d., made up as follows: Refunds of advances, £1,104 19s. 5d.; sales of securities, £956 5s. 4d.; miscellaneous, £905 8s. 1d.

Water Supply.

The work of this branch, which includes surveys for, and construction of reservoirs for conservation of water, boring for water and minerals, sinking wells, clearing tracks, etc., has been continued during the year. A short summary is as follows: 14 water shafts sunk aggregating 993 feet; 169 hand bores sunk aggregating 11,622 feet; 6 diamond drill bores sunk aggregating 1,901 feet. Tanks have been constructed at Golden Valley (roofed and lined), Nevoria, Salmon Gums (agricultural tank), Grass Patch (agricultural tank), and others are in progress at Marda, Ennuin, Currajong and Yackie Yackine, all of which are to be roofed and lined. Norseman No. 2 tank has been enlarged to 3,985,852 gallons capacity, and Menzies No. 1 tank has been roofed to reduce evaporation. Road clearing and water supply have been carried out from Carrabin to Boodalin 7¾ miles, from Manmingu to Koolyanobbin 33 miles, and west of Mt. Ida 32 miles. Windmills have been erected at Murrin Murrin and Golden Ring Wells. Surveys have been carried out at Ravensthorpe, Marvel Loch, Parker's Range, Marda, Ennuin, Currajong, Yackie Yackine and Gordon.

Gold Mining in Natal.

The year's output of gold can only be described as most disappointing, says the Natal Inspector of Mines, in his annual report. The bulk of the output was contributed by the Wonder Mine, which is thought to be almost exhausted; the only other contributor being the Golden Valley Syndicate, which milled intermittently with five stamps. *Vira Mines.*—Prospecting and developing has been actively continued on this property, and very good results have been obtained. A crushing plant is being erected, and the mine should shortly enter the producing stage. If this mine should prove a success, money should be forthcoming to develop other properties in Zululand; should the Vira prove a failure, capital for Zululand propositions will be very difficult to raise. *Pongola Goldfields.*—On the Natal side of the Pongola, the farms Wonderfontein, Vergelegen, and Breda have received the most attention. Practically no prospecting was done on Wonderfontein, though fifty-one prospecting claims have been held throughout the year by the Wonder Mine, Limited, the mineral rights holders of the farm. No work was done on Vergelegen during the first half of the year, but prospecting began early in the second half; a new find was made, and is being developed. On the farm Breda gold was discovered in several places, but the work failed to prove a payable reef, and has now been abandoned. On the Transvaal side of the Pongola a company known as the Pongola Gold Mines has been at work on the farms Klipwal and Morgenzon. On the former a small amount of work has been done, consisting chiefly in repairing the old workings of the Klipwal Mine. A new find was made on the Bat Adit or north side of the hill, and prospecting work has been in progress. The battery and suction gas plant on Klipwal are being placed in order, and the re-starting of crushing at an early date is anticipated.

THE YEAR WITH MAIN REEF WEST.

Improved Milling Facilities—Increased Ore Reserves—Hopeful Outlook.

According to the directors' report of the Main Reef West, Ltd., for the year ended June 30, 1912, the western shaft (No. 5) was brought into operation during the year for hauling rock, and has considerably improved the milling facilities, whilst the ventilation of the mine has been much improved thereby. Unfortunately, it has not been found possible to bring the native labour force up to sufficient strength to supply the mill with its full capacity of 25,000 tons per month, consequently the working costs have not yet reached the figure to which they should be reduced when that is achieved. The payable ore reserves have been increased during the year by 57,460 tons to a total of 685,720 tons of an average value of 6·36 dwts. over a stoping width of 56 inches. This value is ·64 dwt. lower than that of the previous year, on account of the larger proportion of development work done in the western section of the mine, where values are lower than those in the eastern section. During the past year 185,781 tons were milled, the grade being 1s. 5d. per ton lower than that of the previous year, and the average profit was 11s. 2d. per ton. The use of the new west shaft made it possible to supply the mill with ore from all parts of the mine, and thus brings the grade more in conformity with the value of the ore reserves, instead of being limited to the eastern section. The increase in working costs was attributable to the heavier expenses in connection with the native labour supply, which difficulty, it is hoped, will be overcome by the agreement in regard to recruiting, which has been arrived at between the mining groups. The appropriation account may be summarised as follows: Balance brought forward from previous year, £19,684 15s. 2d.; profits earned during the year, £104,240 8s. 2d.; interest and freight rebate, £3,409 10s. 5d.; total, £127,334 13s. 9d.; less audit fees for past year, £210; profits tax for past year, £14,166 10s.; current shaft sinking, £6,029 5s. 5d.; debenture interest, £17,980 11s. 6d.; debenture expenses, etc., £385 15s. 10d.; English income tax, £98 10s. 6d.; dividends Nos. 5 and 6, £73,678 4s.; directors' extra remuneration in accordance with the company's articles of association, £1,000; total, £113,548 17s. 3d.; leaving a balance to be carried forward of £13,785 16s. 6d. The following items of capital expenditure have been incurred during the past year: Buildings, £1,413 10s.; machinery and plant, £22,820 14s. 8d.; shaft sinking, £43,929 13s. 11d.; total, £71,163 18s. 7d.; less shares sold, £22 8s.; total, £71,141 10s. 7d. Of this total the sum of £6,029 5s. 5d. represents shaft sinking in the east shaft, from which most of the ore has been mined during the year, and has consequently been written off against profits. The remaining £65,112 5s. 2d. have been charged against the funds raised by the debenture issue, the cash still available from this source being £41,158 1s. 1d. A balance of £37 still remains to be received on account of the issue of £300,000 debentures.

Consulting Engineer's Report.

Mr. S. C. Thomson, the Consulting Engineer, writes: The shortage of native labour seriously handicapped underground work, and the tonnage mined was, in consequence, less than anticipated. The value of the ore milled was very good, but the small tonnage treated and the heavy expenses on native labour account have had an adverse effect on working costs and profits. The average value of the reef exposed during the year has been below that of past years, largely due to the fact that most of the development has been in a westerly direction, where the values have always been lower than in the central and eastern portion of the property; and, naturally, most of the development was in this direction since, in a property having such an extensive area along the strike, much more work is accomplished in extending drives than can be done in shaft sinking and opening up new drives in depth. The lower levels in the eastern section have given much more satisfactory results. The ore reserves show an increase in amount of 57,460 tons to a total of 685,720 tons, but the value has decreased by ·64 dwt. to an average of 6·36 dwts. The drop in value is mainly due to the low value of the tonnage added during the year, but part of it has been brought about by mining a large percentage of the better grade portions of the ore reserves, since this better grade ore was located near the east shaft, and there could be no object in tramming the poorer ore from the western section to the east shaft and thus increase the costs, when the west shaft was so nearly ready to handle this ore more economically. In April, arrangements were completed f[illegible] west shaft, and this has greatly relieved [illegible] the [illegible] shaft. Also, it has made possible the mining of a larger amount of the low grade ore in the western section. The [illegible] to supply the reduction plant to its full capacity, [illegible] month, provided an adequate labour force is available. A [illegible] per ton must be expected, but this should be [illegible] costs on the larger tonnage when working nearer to the [illegible] capacity of the plant.

General Manager's Report.

The Manager writes *inter alia*: The east shaft has [illegible] timbered a further 265 feet to 3,615 feet and is now within [illegible] feet of the twelfth level. The tenth and eleventh stations have been completed, also the ore passes from the eighth to the tenth [illegible] has been suspended for the last two months, as it has been necessary to effect extensive repairs to the older part of the [illegible] become badly worn. These repairs, however, will soon be completed and sinking will be actively resumed. Main Reef Leader. D[illegible] in the wetern section of the mine has been continued from the fourth level to the seventh. The results obtained here have been disappointing. The reef exposed has been either unpayable or just over the pay limit. There is still, however, an untouched stretch of [illegible] about 1,200 feet in length up to the western Bantjes boundary, which may yield better results, if not in the Main Reef Leader probably in the South Reef; cross-cutting to the latter is proceeding. The Main Reef Leader was struck in the west shaft at 2,572 feet and [illegible] averaged 2·4 dwts. over a stoping width of 48 inches. On the eleventh station, a few feet lower down the shaft, the Leader averaged 3·4 dwts. over 48 inches, and 115 feet of driving done to date on the tenth level has shown an average of [illegible] dwts. over 48 inches. A long winze which has connected the seventh and tenth levels close to the west shaft has disclosed reef of better value though somewhat disturbed. 447 feet out of a total of 775 feet have been on reef of an average value of 6·2 dwts. over 48 inches. Driving on the lower levels from the east shaft has yielded rather more encouraging results. West of the shaft the last 500 feet on the eighth level has been of good value. The [illegible] and tenth west drives are fair, but as some of the value is contained in the Main Reef it will be necessary to carry the stopes about [illegible] inches in width to take the latter reef; a good deal of the rock developed is just over the pay limit and some of it is unpayable. East of the shaft the ninth, tenth and eleventh drives have developed ore of good value. The first two drives have reached the eastern boundary, but the eleventh is still some 750 feet away. The average value of the Leader disclosed by 300 feet of driving on the eleventh level is 6·[illegible] dwts. over 48 inches. The summary of the value of the driving accomplished during the year on the Main Reef Leader is as follows: Of [illegible] feet driven 4,456 feet—78 per cent.—were on reef. Of this 2,819 feet—63·2 per cent.—is payable, of an average value of 7·2 dwts. over 48 inches, including the value of the Main Reef exposed within 48 inches; and 1,637 feet—36·8 per cent.—unpayable, of an average value of 4·0 dwts. over 48 inches. South Reef. A small amount of driving has been done on this reef during the year on the seventh level in the western section and on the tenth and eleventh levels near the west shaft. Of 334 feet of driving, 238 feet—71 per cent.—is on reef, of an average value of 2·4 dwts. over 36 inches. The South Reef was cut in the west shaft at 2,432 feet and assayed 0·7 dwt. over a stoping width of 36 inches. West Vertical Shaft, No. 5. This shaft has been sunk and timbered 1,109 feet to 3,030 feet. The seventh level [illegible] has been completed and the connection made with the workings from the east shaft. This has greatly improved the ventilation throughout the mine and facilitated the handling of [illegible] and stores and since [illegible] (when the ore passes from the fourth to the seventh [illegible] were completed) a fair proportion of milling rock has been [illegible] through the west shaft. On the tenth level a cross-cut has been driven to the reef and a certain amount of driving accomplished, the results of which have been already stated. At the eleventh level a [illegible] loading station has been cut and is nearly completed. By means of ore chutes all the rock stoped from the seventh [illegible] to the eleventh will be hoisted from here. The thirteenth level station has just been cut at 2,958 feet; the rock from the twelfth level will be handled at this station. The [illegible] decided on is to continue sinking vertically to a depth of 3,[illegible] feet and to cut the bottom station at 3,500 feet, at which level a [illegible] and travelling way will be driven which will eventually connect for ventilation purposes with a similar road from the bottom of No. [illegible] of the Consolidated Main Reef Mines and Estate, Limited, [illegible] subsidiary incline shafts which will be necessary for the future working of the property will be laid out from the main [illegible]. The [illegible] compound rock hoist at this shaft, [illegible] stroke, is designed for an economic [illegible] of [illegible] feet [illegible] and is easily capable of hoisting [illegible] tons an hour from this depth. Eventually all rock will be handled by this hoist. The sinking of this shaft should be completed by the end of [illegible], after which development in the lower levels will be [illegible] and the tonnage can be rapidly increased. The total footage for the year [illegible] as follows: Main shafts, 1,371 feet; stations, [illegible] feet; [illegible] other cross-cuts, ore bins, etc., [illegible] feet; South Reef [illegible], [illegible] feet; Main Reef Leader drives, [illegible]727 feet; Main Reef Leader raises and winzes, 3,108 feet; total, 12,81[illegible] feet.

Ore Reserves: These have been carefully checked and the policy adopted last year of calculating the combined Main Reef and Leader blocks over a stoping width of 60 inches or more has again been followed. Payable ore reserves exposed and developed at 30th June, 1912: Main Reef Leader, 678,920 tons, value 6·35 dwts. over 56 inches; South Reef, 6,800 tons, value 7·0 dwts. over 36 inches; totals, 685,720 tons, value 6·36 dwts. This shows an increase in tonnage of 57,460 tons and a decrease in value of 0·64 dwts. The unpayable Main Reef Leader tonnage at date is 255,370 tons of an average value of 4·1 dwts. over 54 inches, and is equivalent to 9·8 per cent. of the total Main Reef Leader tonnage hitherto developed. Mining: South Reef mined, 686 tons; Main Reef mined, 2,014 tons; Main Reef Leader mined, 212,788 tons; total, 215,488 tons; less waste sorted out (13·81 per cent.), 29,757 tons; total, 185,731 tons; difference in ore bins, 50 tons: ore milled for year, 185,781 tons. Milling and Cyaniding: Tons milled, 185,781 tons; number of stamps at work, 81·62 stamps; days running, 308·88 days; duty per stamp per day, 7·369 tons; sands treated, 101,198 tons; slimes treated, 84,583 tons; assay value of mill rock, 8·259 dwts.; yield from mill, fine gold, 55,284·084 ozs.; yield mill per ton milled, 5·951 dwts.; percentage of extraction, 72·06 per cent.; yield from cyanide works, 18,187·282 ozs.; yield from cyanide works per ton milled, 1·958 dwts.; percentage of extraction, 23·70 per cent.; total yield in fine gold, 73,471·366 ozs.; total yield per ton milled, 7·909 dwts.; percentage of extraction, 95·76 per cent.

Native Labour: Your company has been severely handicapped during the year through shortage of native labour. From 1,686 boys available last July we gradually dropped to 1,435 in January, but were up to 2,000 again in June. This shortage of labour has had a very adverse bearing on the tonnage and costs, December falling to 13,267 tons milled with working costs 23s. 1d., whilst in June, with increased labour force, the tonnage had risen to 19,782 with costs of 20s. 6d. Capital Expenditure: The capital expenditure for the year amounts to £71,163 18s. 7d., being made up as follows:—(1) Buildings, £4,413 10s.; (2) main shaft and stations No. 4, £6,029 5s. 5d.; (3) main shaft and stations No. 5, £37,900 8s. 6d.; (4) mill equipment, £1,512 13s. 9d.; (5) equipment No. 4 shaft, £395 2s. 2d.; (6) equipment No. 5 shaft, £4,274 3s. 2d.; (7) crushing and sorting station, No. 5 shaft, £12,671 8s. 3d.; (8) railway siding and equipment, £2,410 0s. 5d.; (9) compressed air piping, £450 9s. 2d.; (10) compressor condensers, £655 1s. 9d.; (11) electric transmission line, £349 1s. 7d.; (12) surface water piping, £102 14s. 5d.; total, £71,163 18s. 7d. Item No. 1 includes the company's half share in the new native hospital. Item No. 2 will be dealt with in the appropriation account. Item No. 7, crusher station, No. 5 shaft: This station was completed in March and is working most admirably. The bins of the headgear will hold, roughly 1,500 tons of rock, so that all rock hoisted on the night shift can be sorted and crushed on day shift when the light is good. All milling rock from the two shafts is now transported to the mill bins in 40-ton hopper wagons on the standard gauge line. The mill bins have been equipped with steel trestle bridge work to carry the hoppers and heavy locomotives. A third 500 h.p. Babcock and Wilcox water tube boiler has been erected at No. 5 shaft and a fourth is on order owing to the excellent results obtained by installing chain grate stokers at the main boiler installation at the Consolidated Main Reef. Orders are being placed for similar stokers for the boilers at this shaft. In conclusion, all the plant and machinery has been maintained in a high state of efficiency. Attached to this is a summary of the total capital expenditure incurred by the company from the commencement of operations to the 30th June, 1912.

Summary of Capital Expenditure to 30th June, 1912: No. 4 shaft equipment, £51,706; No. 5 shaft equipment, £74,413; reduction plant, £68,813; joint store, office, workshops, stables etc., £12,452; workmen's quarters, compound, etc., £19,298; electrical plant, £5,198; joint railway line £13,881; furniture, £491; fencing, etc., £84; No. 4 shaft (including stations), £92,739; No. 5 shaft (including stations), £88,088; development, £66,412; stable equipment, £412; forestry, £512; shares, £8,917; total, £503,416. The capital expenditure incurred up to the end of 1904 amounting to £35,000 may be classed as war expenditure and can be looked upon as mostly unproductive. Active work was started in January, 1905, and up to the end of June, 1912, the total capital expenditure incurred by the company, including the £35,000 above mentioned, amounts to £503,138.

"Bucklands Township."

A FEW PERTINENT QUERIES.

We take the following from a recent issue of *John Bull*, an English periodical conducted by Mr. Horatio Bottomley:

A SOUTH AFRICAN REAL ESTATE COMPANY.

English investors will shortly have a unique opportunity of purchasing town-lots from a South African Estate Company, which is laying out a new township about 30 miles north of Kimberley, in the centre of the diamond fields. Situated in a fine, healthy position, about 4,500 feet above sea level, overlooking the valley of the Vaal River, and on the main coach road between Sydney and Kimberley, the new town of Bucklands should soon become a flourishing centre. A large hotel is to be erected and land allocated for the use of various religious denominations; a sanatorium is also to be founded, and a motor service to Kimberley inaugurated. A plentiful supply of water is available, and the Vaal River falls will provide power for electricity. We understand that the Bucklands Estate Company will offer the first lot of town-stands, 50 feet by 100 feet, at £50 each, payable £5 down and £2 10s. a month, the company reserving the right for two years of re-purchasing for £500 in the event of diamonds being discovered. The great increase in the value of town-lots which takes place in progressive countries is well known, and we expect large numbers will take advantage of getting in at bed-rock prices. The company which has a capital of £50,000 in 5s. shares, £10,000 of which has been reserved for working capital, is under the able management of Mr. Hirschel-Cohen, well known in South Africa for his experience in municipal enterprises.

One of the especial functions of *John Bull* is understood to be protection of the public against wild-cat flotations and the advising of prospective investors. We would ask, therefore: (1) Has *John Bull* any knowledge of the situation of "Bucklands" and of its probable or possible value as a township? (2) Is the "township" referred to above an abandoned alluvial field? (3) What is there to support such a township, and what justification is there for the erection of "a large hotel" or for the "founding of a sanatorium," to say nothing of the allocating of land for "the use of various religious denominations"? (4) Who is Mr. H. Hirschel-Cohen, and what is his experience in connection with "municipal enterprises"? (5) What is there to make these Bucklands Town stands worth fifty shillings, let alone fifty pounds, each, and how many stands do the directors expect they will "repurchase for £500"? From what we know of Bucklands, we are tempted to advise prospective purchasers to ponder on the fate of that charming place which was known as the "Garden of Eden," so admirably described by Dickens in "Martin Chuzzlewit."

A RESEARCH UPON A REFRACTORY GOLD ORE.

Valuable Paper Describing Important Tests.

THE following extract forms the final portion of a lengthy and interesting paper read by Mr. Morris Green at the last meeting of the Chemical, Metallurgical and Mining Society of South Africa. The paper, which is unfortunately too long for publication in extenso in this journal, is valuable not only on account of the detailed description of a systematic examination of ore from the Mount Morgan mines, Barberton, with apparently successful results, but also because it gives an outline of a course of investigation which might be followed with advantage in the examination of other ores of a similar kind. Having, by a series of tests, discovered that the gold in the ore was existent under two conditions, which were determined, the author concludes :—

A complete interpretation of the mode of existence of the gold in the ore may now be offered : a portion of the gold occurs in the pyrite in the free state ; the remainder is alloyed with silver, and this alloy, attached to quartz, is completely enshrouded with marcasite. The reasons for the failure to treat the ore successfully can now be comprehended. This failure is, of course, a result of the peculiar mode of existence of a portion of the gold. The facts explained in the last few pages throw into shape many of the results obtained at an earlier period of the investigation and, at that time, unexplainable. The intimate knowledge acquired as to the mode of existence of the gold in the ore dissipates the conceptions—such as "premature precipitation" theories—which have, for long, served to entertain the imagination. The soundness (or otherwise) of the hypothesis can be easily confirmed. If the assumption of the theory to account for the poor extraction by cyanide is justified, removal of the coating over the gold-silver alloy should render the latter amenable to cyanide. A quantity of the residue (left after cyaniding Mt. Morgan ore for 70 hours in the tests summarised in Table VIII.) assaying 10 dwt. gold per ton was attacked with HNO_3 Aq. (1·2 sp. gr.), the ore being made into a pulp with the acid and stirred with a rod for a brief period. The acid was then washed out of the pulp and the residue mechanically agitated with 0·25% KCN Aq. for about 18 hours. Seventy-one per cent., or 7·1 dwt. gold per ton, was extracted. Slime assaying 3·3 dwt. gold per ton, and by the methods previously tried irreducible in value if one continuous treatment be given was similarly stirred up with 1·2 sp. gr. HNO_3 Aq., using 1 volume of this acid to unit weight of slime. After washing out the acid, the residue was mechanically agitated with 0·24% KCN Aq., for 18 hours, the proportion of solid to solution being 1 :2½. Over 70 per cent. was recovered, the residue showing slightly less than 1 dwt. gold per ton of original slime. Roasting the ore should also result in the exposure of the gold-silver alloy. A quantity of concentrate (−80) was roasted, starting from a low temperature and increasing the heat to bright redness. The loss of weight was 14%, (*i.e.* on the weight of the original concentrate). Roasted concentrate (assay value 27·2 dwt. gold per ton of *roasted* concentrate), was ground up with mercury in an ordinary mortar. About 50% of the gold was amalgamated. Another portion of roasted concentrate was amalgamated in the pan used in previous tests. After grinding for over an hour, 70% of the gold was collected by the mercury. In separating the latter from the pulp no trace of the mineral observed in amalgamation tests with the unroasted concentrate was detected. No metallic-looking material, in general, was present in the roasted ore. Roasted concentrate, crushed to pass a 200 mesh sieve, was mechanically agitated with 0·24% KCN Aq. for 20 hours, the proportion of solid to solution being 1 :3½. 53% of the gold was dissolved by the cyanide : the consumption of the latter was 1¼ lbs. per ton of ore. During roasting of the ore a portion of the gold is very probably fused, so that large globules may be formed ; a long treatment with cyanide would then be necessary for the recovery of a high percentage of the gold. Removal of the coarse gold by amalgamation, and cyanidation of the amalgamation tailing would render this long treatment unnecessary. The following test shows that coarse gold *is* responsible for the poor extraction by cyanide in the given time (*i.e.*, 20 hours in the previous test) :—Roasted concentrate was ground up with mercury in the pan. The amalgamation tailing was then mechanically agitated for 21 hours with 0·23% KCN Aq., the proportion of solid to solution being 1 :3. The table shows the results.

TABLE X.

	Dwt. Gold per Ton.	Percentage of Total Gold in Original Concentrate.
Extraction by Amalgamation	20·3	74·8
Extraction by Cyaniding	5·0	18·4
Residue	1·8	6·6
Original Concentrate	27·2	100·0
. . Total Extraction	25·3	93·2

Roasting, therefore, is [illegible] methods used. A quantity of slime (assay [illegible] ton), in a layer about 1½ in. deep, was exposed [illegible] several weeks, the mass being moistened [illegible] (which was alkaline). Treatment with [illegible] resulted, as before, in reducing the gold content [illegible] of original slime, the usual amount of silver [illegible] A portion of the weathered slime, without this [illegible] mechanically agitated, for 20 hours, with 0·23% KCN Aq. The residue contained 2·7 dwt. gold and 1·7 dwt. [illegible] the gold plus silver in the residue, 60% is gold [illegible] approximately, the gold-silver alloy being therefore [illegible] solved). An additional 0·6 dwt. gold per ton has [illegible] as a result of the weathering of the slime, since the [illegible] was irreducible below 3·3 dwt. gold per ton by any [illegible] ment. The additional recovery resultant upon a second [illegible] very probably due to the cause operating also during weathering [illegible] gold-silver association is partly exposed by oxidation of the [illegible] mineral. The slime, on weathering, darkened in colour and [illegible] washes showed an alkaline reaction, due very probably to the fact that the slime, during weathering, was wetted with alkaline water. A number of (distilled) water washes applied to the freshly [illegible] original ore contained acid neutralized by 0·22 lb. NaOH per ton of ore. Since the soluble sulphates present, *e.g.*, $MgSO_4$, are objectionable, the addition of sodium carbonate, to precipitate the insoluble carbonates, is an obvious necessity. Under the conditions prevailing in the above roasting tests, the roasted ore contained much [illegible] sulphate. The question of concentration of the ore was touched upon before. Since it *may* constitute a vital part of a complete treatment and *possibly* render the latter economically possible, different methods of concentration were considered. Hydraulic classification of the ore crushed through a 20 mesh sieve with removal of the slime [illegible] efficiently separate the pyrite and quartz, this result being, of [illegible] expected. An application of the principle of "hindered settling" yielded a similar result ; so also did the Wilfley and slime tables. The same result holds for −20 + 30 material. With [illegible] material a somewhat better concentration than before [illegible] obtained, employing "free falling," or "hindered settling," or the Wilfley or slime tables. With −60 + 90 material the slime and Wilfley tables indicated their superiority over the [illegible] other methods. A moderately good concentration [illegible] possible [illegible] two former appliances. The results of a concentration test [illegible] −90 + 120 material, performed on the slime table, is given in Table VI. The Wilfley also concentrates this material efficiently. "Free falling" gives a poor concentration. The slime table and Wilfley are efficient concentrators, too, with the finer sized ore (slime excepted). The best sieve through which the ore should be crushed for concentration on the slime table or Wilfley appears to be the standard 90 mesh used in all these tests. Ore in this state of division can be closely concentrated ; also, the crushing of the ore, by suitable means, though a 90 mesh sieve does not result in the sliming of an excessive amount of rich material. Throughout these concentration tests the characteristic mineral often referred to and explained before was observed to follow the pyrites. To test the applicability of the Elmore vacuum process to the ore, an experimental plant was employed. With varying amounts of oil and sulphuric acid no concentration could be effected. With nitric acid and oil a selective action was apparent, the pyrite tending to float. The method in general, however, appeared unsatisfactory and was not carried further. Of the methods of concentration tried, the best is the employment of either slime or Wilfley tables. If the slime table is adopted a number of [illegible] installed, so that the middling from the first [illegible] on a second, and so on. With a Wilfley yielding several products [illegible] of the latter could be regarded as a finished concentrate [illegible] rejected, and any intermediate material re[illegible] table. A scheme for a complete treatment of the [illegible] outlined :—Crush so that all the ore would pass through [illegible] sieve (*i.e.*, 90 meshes per linear inch), concentrate [illegible] the tail end) roast the concentrate [illegible] the roasted [illegible] mercury, separate the latter [illegible] from the [illegible] mechanically agitate with cyanide this [illegible] almost entirely of slime. The weathered tails [illegible] ciently exposed, may be cyanided. Whether [illegible] from weathering as to render cyaniding of the tails [illegible] impossible, by whatever method used [illegible] by alkali, or removal of the [illegible] can be answered only after [illegible] possibility of weathering will [illegible] stances (*e.g.*, available area [illegible] cally superior, scheme is to [illegible] mercury, and after the separation [illegible] mechanical agitation) the [illegible] tions, coal is expensive at the Mount Morgan [illegible] of modifications of the main [illegible] amalgamating and cyaniding [illegible] with the question of costs and [illegible] pointed out in a previous [illegible] ation of the amalgamated [illegible] in gold from rich sand. [illegible] might be suggested :—Crush [illegible] concentrate with mercury [illegible]

the pulp into slime and sand, reject the slime, roast the sand, amalgamate the roasted material by grinding with mercury, separate the latter and cyanide the pulp. Such a complete treatment was carried out, but owing to the impossibility in practice (it was even considerably difficult in a laboratory test, and not always successful) of separating only the very poor slime from the rest of the pulp at the commencement of the process, the latter becomes of little practical value. In conclusion, the author desires to express his indebtedness to Prof. G. H. Stanley and Mr. M. T. Murray for their interest and advice in the carrying out of the investigation; and to the Senate of the S.A. School of Mines and Technology for placing the resources of the School at his disposal.

MINERS' PHTHISIS COMMITTEE'S REPORT.

A Valuable Series of Recommendations and Suggestions.

The Miners' Phthisis Prevention Committee has issued a preliminary report embodying a number of valuable recommendations. The text of the report is as follows:—Although the nature of the investigations on which we are engaged will not permit of a final report being presented by us at an early date, we feel that the urgency of the case justifies us in making certain recommendations, which we are now in a position to present, and which, if carried out, will materially assist in preventing miners' phthisis. They will be of great assistance to managers and miners, partly as explanations and amplifications of the existing regulations, and partly as a guide to what should be done to allay dust. Their observance will accustom all persons working in mines to the nature and routine of the precautions required to combat the evil. These recommendations may possibly be considerably amended in our final report, and we do not therefore recommend that they should be given effect to immediately in the form of regulations but rather that they should be treated as suggestions, the adoption of which is strongly urged by this committee. If, however, after a few months' trial it is found that they have proved efficient at the mines at which they have been carried out, but that they have not been fully adopted on certain other mines, it is recommended that they be enforced by means of additional regulations issued under the Mines and Works Act. On many mines the preventive measures detailed hereafter are already being carried out, and it is largely due to their successful operation that we are induced to put forward our recommendations as practicable measures, the universal adoption of which would mean a considerable all-round improvement on existing conditions. Our recommendations may be conveniently divided into two sections, namely, those applying to and amplifying existing regulations intended for the prevention of phthisis and those which are not covered by existing regulations.

Existing Regulations.

Regulation 60: Every working place where rock-drills are in use for the purpose of development as well as every winze, whether sunk by rock-drills or otherwise, shall be furnished with a water-blast or other suitable and effective appliance for laying and removing the dust and smoke after a blast. Any mine in which, in the opinion of the Inspector of Mines, the dust produced by drilling is not likely to cause miners' phthisis shall be exempted from the provisions of this regulation.

It is recommended: (a) That before blasting in stopes, drives, winzes, or raises or in any other working place, all surfaces within twenty-five feet of the working face be sprayed with clean water, or with water containing substances specially added for dust allaying till thoroughly saturated; (b) that at the exit or exits of the ventilating current from any such working place where blasting is being carried on, sprays be fixed to arrest the dust produced by blasting and prevent it from being diffused through the mine. Sprays should always deliver in the direction of the ventilating current, and not against it. Sketches of sprays, and of their arrangement, are shown in the appendix to this report, but other suitable devices may also be adopted; (c) that in all development faces, with the exception of winzes worked on single shift, a powerful water blast be applied at blasting time consisting of water fed continuously from the supply pipe and sprayed by means of compressed air. This water-blast should be brought into action immediately after lighting up by the miner in charge and should be placed at a short distance from the face to obviate its injury by the explosion and to prevent the dust and fumes from passing through to the rest of the mine, while being at the same time near enough to the face to clear the atmosphere at that point effectively. The miner should, before lighting up, test the water-blast to see whether it is in order, and if it is not in order no blasting should take place. Sketches of water-blasts are shown in the appendix to this report, but other suitable devices may also be adopted.

Blasting Fumes.

Regulation 61: No person shall return to an end, rise, winze, or other close place until the air is free from the dust, smoke, and fumes caused by blasting.

It is recommended that no person be allowed to return to the face, when a water-blast is in use, in less than twenty minutes after blasting, and that where it is not in use a return to the face during the same shift, with the intention, for example, of blasting the round after the cut or of re-blasting the cut, be absolutely prohibited and considered a contravention of the regulation.

Regulation 101 (1): No person shall, in the drilling of holes, use or cause or permit to be used any percussion machine drill unless a water jet or spray or other means equally efficient is provided and used so as to prevent the escape into the air of dust caused by the drilling, and unless the floor and sides of the working face to a distance of at least ten feet from the face be kept sufficiently damp to prevent dust being raised by the escape of exhaust air from the rock-drill.

Attention should be drawn to this regulation as implying not only that the surfaces near the working face should be wetted once, but that they should be kept continually wet, and that should the water supply fail or become inadequate to lay the dust, drilling must cease. It has been already recommended under Regulation 60, that the distance of ten feet should be increased to twenty-five feet.

Removing Rock.

Regulation 101 (2): No person shall in any part of a mine remove any broken rock or ground, or cause or allow the same to be removed if such rock or ground is in a dusty condition, unless and until it has been effectively damped and is kept damp so as to prevent the escape of dust into the air during removal.

It is recommended that closer attention should be paid than is done at present to the wetting of rock which is being moved, and that its dampness should never be a matter of doubt. It should also be noted that the regulation covers sweeping and the transfer of rock in ore passes and shaking shoots. Steps should be taken, by means of spraying, to prevent dust being formed in these operations. It is not sufficient merely to allow water to run down the footwall of a stope from the level above, or down a pass or shaking shoot.

(To be continued.)

Royal Society of South Africa.

The annual meeting of the Royal Society of South Africa was held at Capetown last week. The following were elected fellows: Dr. W. A. Jolly, Mr. J. Medley Wood, Dr. B. Dest, and Mr. J. van der Riet. At the ordinary meeting the following fellows were elected as members of the Council for the ensuing year: Dr. L. Peringuey, Dr. L. Crawford, Dr. J. C. Beattie, Mr. S. S. Hough, Dr. J. K. E. Holm, Dr. W. A. Caldecott, Dr. C. F. Juritz, Dr. G. S. Corstorphine, Dr. E. T. Mellor, Dr. A. Jasper Anderson, Dr. E. S. Warren, and Dr. R. Marloth. Dr. L. Peringuey was re-elected president, Dr. L. Crawford hon. treasurer, and Dr. J. C. Beattie hon. general secretary. Grants in aid of research were made as follows: E. W. Hamlin, Capetown (£90), to carry on research on the commutation in electrical machinery; P. A. Methmen, Pretoria (£50), a journey to the Great Karasberg Range for the study of the taxonomy and distribution of the lower vertebrates and several groups of the invertebrates of Great Namaqualand; G. Rattray, East London (£50) travelling expenses in connection with the continuation of investigation of taxonomy and distribution of South African cycads; E. L. Stephens, Capetown (£15) —(a) determination of South African fresh water algae, (b) periodic changes in fauna and flora of certain South African vleis; A. W. Tucker, Johannesburg (£50), an ethnological survey of the Topnaur tribe of Hottentots; A. Young, Capetown (£20), to continue investigations regarding wells in the Karroo.

A YEAR OF THE KLERKSDORP MINES.

Progress at the Afrikander. Machavie, New West Bonanza, Ariston and Warren Hill.

The Klerksdorp Inspector of Mines (Colonel H. Bottomley) has the following references to the Klerksdorp district in his report for the year ended December 31, 1911, which is published in a Mines Department bluebook to hand a few days ago:—

"The mining outlook in this district has not improved during the year; in fact, the position is somewhat worse than it was in 1910, owing to the shutting down of the Afrikander at the beginning of the year, and the New West Bonanza in December of the year under review. No new discoveries of any importance have been recorded. The Cyferfontein Main Reef fiasco has also doubtless contributed to the loss of confidence in the district.

Afrikander Proprietary Mine.

The Afrikander has no reduction plant erected, but the available ore reserves show 227,000 tons of a value of 8·27 dwts., the development faces having been stoped in good ore. It is difficult to understand why this, the premier mine of the district, should have been allowed to cease its operations. Its shutting down has been severely felt by the whole district.

New West Bonanza.

The mine has for a long time been struggling with a grade which in ordinary circumstances would be considered payable, but which in this case resulted in continued loss, owing to the mining conditions, which rendered it impossible to work at a low cost. The secret of the trouble is the fact that the reef forms a shallow syncline, and that consequently continuity in depth is entirely absent. The company has recently opened up promising values on adjoining claims recently acquired, but owing to the failure of working capital these have been temporarily abandoned.

Warren Hill.

This mine has been steadily crushing during the year, on a grade of close on 6 dwts. Trouble has been experienced with the Bettington boiler, which for a time formed the principal unit in the steam generating plant.

Ariston Mine.

This mine has continued crushing on a grade averaging about 4·5 dwts. The fact that the mine has managed to pull through on this low grade rock is a great credit to the management.

Machavie Gold Mining Company.

This mine restarted crushing during the latter part of the year, on outcrop rock, a great quantity of which is easily attackable, owing to the low angle of dip and favourable surface contours. It will be possible, owing to the absence of graphite shales, which are found at depth overlying the reef, to obtain a more perfect reduction of the gold contents than was the case with rock won from the deep-level workings. It remains to be seen, however, whether the grade is sufficiently high on the outcrop to justify expectations.

Cyferfontein Strike.

In the latter part of 1910 the district was startled by the alleged discovery on Cyferfontein, to the immediate north of Buffelsdoorn, of a section of main reef carrying payable values in a borehole. During the year prospecting operations were vigorously prosecuted, the result, however, of such prospecting operations were absolutely negative, the curious point being that not even the reef found in the borehole was ever located either in sinking or on the outcrop. The depth of the alleged strike was 540 feet from the surface. The effects of this supposed strike were far-reaching for a time. Every available piece of ground within ten miles of the borehole, on the supposed strike, were taken up, only to be abandoned when the Cyferfontein Syndicate, officially named the Main Reef Exploring Syndicate, with headquarters in Johannesburg, suspended operations and went into liquidation.

Buffelsdoorn.

This well-known old mine now resumed the Quest. has restarted crushing with 20 stamps. The object of the company is to work out the remaining payable ore in the mine above the main fault, which marks the known limit of the reef in depth.

Outlook Syndicate.

The Outlook Syndicate was working during the greater part of the year in the Venterskroon district, and recovered about 375 ozs. The mine closed down in November last. There is practically no work being done at any of the numerous reefs now, the grade being too low and uncertain to warrant it.

Mr. F. R. Atkinson, who has been acting secretary of the Simmer Deep, has been appointed secretary of the Vaalbank Coal Company, Middelburg. Till the return of Mr. F. A. Hiscock, Mr. H. T. Pomfret is acting secretary of the Simmer Deep.

* * * *

The next monthly meeting of members of the Geological Society of South Africa will be held in the Council Chamber, Chamber of Mines, Johannesburg, on Monday evening, 30th September, 1912, at 8.15 p.m. The following papers will be open for discussion:—"Notes on the Pebbles of the Rand Banket," by R. B. Young, M.A., D.Sc. (Edin.); "On the Occurrence of Dwyka Conglomerate in the Klip River Valley," by David Draper (hon. member); "Some Sections on the Farm Zuurbekom," by David Draper (hon. member); "A Contribution to the Structural Geology of the East Rand," by H. L. Krause, A.S.M. (Ballarat); "Volcanic Rocks of the Pilandsberg," by W. A. Humphrey, B.A., Ph.D. The following papers will be read:—"The Occurrence of Sideroplesite and Ankerite in the Tin Lodes at Rooiberg," by David P. Mcdonald, M.A., B.Sc.; "Note on the Origin of the Iridosmine in the Banket," by R. B. Young, M.A., D.Sc. (Edin.).

Moodies G.M. Co.: Improved Prospects.

A meeting of Moodie's Gold Mining and Exploration Company was held last week, at Pietermaritzburg, at which the directors expressed their willingness to call a meeting to consider a scheme that the head office should be transferred from Maritzburg to London, in the interests of the English shareholders. Speeches were made showing that the prospects of the Barberton properties promised good results under new development. Several new interests have recently come under Moodie's control, including the Rosetta, the Fortuna, the Alpine, the Lochnagar and the Ivy claims. Good profits, it was stated, were being made from alluvial workings.

Rhodesian Section.

LATEST MINING NEWS.

A New Bulawayo Producer—The Selukwe's Position—Developing the Oceola—Another Hartley Tribute—The Quarter at the Eldorado—Latest Results from the Lonely.

CRUSHING operations on the Redrup's Kop Mine, twelve miles from Bulawayo, which is now controlled by the Forbes Rhodesia Syndicate, are just commencing. The reduction machinery consists of a 5-stamp gravity mill and a 5-foot Chilian pan, with sands and slimes plants, estimated to be easily capable of treating 2,000 or more tons of rock monthly.

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Mr. F. E. Lander, presiding at a meeting of the Selukwe Gold Mining Company, Ltd., held in London in mail week, said that at the last meeting it was decided to let the mine on tribute, and the tender of the Tebekwe Syndicate for the lease of the Tebekwe Mine was subsequently accepted. Under the tributing agreement the company received a percentage of the gold won, and 50 feet of development was provided for under the supervision of their own engineer. The tributors had opened up some better values on a new strike on the 3rd level, but those values had not been maintained. With reference to the southern blocks no acceptable offer had been received, although every effort had been made to lease them on tribute. The recent development work of the tributors had revealed little or nothing of an encouraging nature. The policy of the board was to husband their resources, so that if an opportunity presented itself they could, on their own account, or in conjunction with others, finance a scheme for sinking to a further depth. Their cash position was perfectly sound, as they had £6,000 in cash and on loan. They possessed 9,064 shares in the Rhodesia Chrome Mines, and while their own mine was on tribute their expenses should be covered by the amount received in dividends and interest, so that their resources should be maintained intact. The report was adopted.

* * * *

The first statutory meeting of the Oceola Gold Mining Company, a locally floated venture, was held in Salisbury the other day, when Mr. E. T. Mumford presided. In the course of his speech he stated that they were only a little company, and they had only got a capital of £5,762 10s., but were doing as much development per month as the Eldorado Mine, which, for the last two years, had been averaging something about 3,000 feet. The Oceola had been doing about 250 feet per month for the last three months. They must, consequently, not expect too much in dividends. They had received one dividend of 20 per cent., and it had been thought that there would have been another this month; but for this month it was going into development, because their actual running expenses on the mine amounted to £700. In addition to that they had no capital, and their capital had got to come out of the mine. Consequently they wanted extras for the Tata. They had just started a shaft, which was sunk 200 feet, and for that they wanted a boiler and a hoist. The new boiler, of 25 h.p., had cost £400 odd, and that had got to come out of what they ought to have paid in a dividend. He thought that they would agree that they should push development or else they were simply going to work the mine out. At the present rate, by the end of twelve months, they ought to have what would really be a very fine mine. The last output was roughly £1,170, and they would show a profit of about £890. They had been running a 10 dwts. grade. In running a mine like theirs they were bound to get a lot of low grade stuff running about 5 dwts., which it paid to crush.

* * * *

The Pioneer and Salamander claims, situated on the Umfuli River, in the Old Hartley District, and the property respectively of the United Rhodesia Goldfields, Ltd., and the Mashonaland Agency, Ltd., have been taken on tribute by the Old Hartley Pioneer Syndicate (Messrs. M[illegible], Buchanan and Bruce). A complete reduction plant, consisting of Huntingdon mill, boiler, engine, pumps, etc., has been purchased, and will be erected without delay.

* * * *

The report of the Eldorado Banket G.M. Co. for the quarter ended June 30th states that the mill ran 83 days: tons crushed, 20,843, yielding 10,102 ozs.; tons treated by cyanide, 21,449, yielding 2,945 ozs.; total value, £55,503; profit, £30,790. The accumulated tailings on hand at June 30th, 1912, will yield, it is estimated, a profit of approximately £690. The following interim dividend has been paid in respect of the financial year, ending March 31st, 1913: July 26th, 1912, interim dividend No. 9 of 15 per cent. (3s. per share). The estimated balance of net profit (including the estimated profit on accumulated tailings), after deduction of the interim dividend referred to above, and subject to the customary depreciation allowances, amounted at June 30th, 1912, to approximately £12,710. Winze No. [illegible] from 9th to 10th level had, at the beginning of June, been put down 60 feet, the last 25 of which averaged about 27 dwts. over a width of 5 feet, while later advices show that at a depth of 77 feet from the 9th level—the deepest part in the mine—the reef gave an average assay value of 2[illegible] dwts. per ton over 72 ins., evidencing that reef values are being maintained in depth. The main incline shaft had a depth at June 30th of 1,216 feet—some 30 feet below the 9th level, and will be abandoned as soon as the new main vertical shaft reaches the 10th level, which depth it is expected to reach about September next. The new main vertical shaft, from which the development of the mine below the 9th level will be carried on, had, at June 30th, a depth of 941 feet. Development from this shaft will result in a saving of something like 300 feet or 400 feet of driving on each subsequent level.

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The following details are extracted from the quarterly report of the Lonely Reef G.M. Co., for the quarter ended June 30th:—Mine: Number of feet driven, sunk, and risen during quarter, 1,128 feet; excavation [illegible] chambers, etc., equivalent to 78 ft. [illegible] reserve at March 31, 148,738 tons; added to reserve during period, 13,230 tons; total, 161,968 tons. Less milled, 8,893 tons. Ore in reserve June 30, 153,075 tons. Average value of ore in reserve, 23·26 dwts. Mill ran 76·56 days, crushing 8,893 tons of ore, yielding 8,336·105 ozs. Accumulated slimes treated, 1,662 tons, yielding 638·25 ozs. Total yield, 8,974·3[illegible] ozs. fine gold. The total working cost [illegible] total number of tons milled, viz., 8,893 tons, amounted to £1 17s. 3·31d. per ton milled, as against £2 [illegible] 0·79d. in the preceding quarter, a reduction of [illegible] per ton milled. The figures for the June quarter include the cost of treating 1,662 tons accumulated slimes, as against 1,600 tons in the preceding quarter. The total working cost, calculated on the total number of tons treated, including the tonnage of accumulated slimes, amounted to £1 11s. 1·31d. per ton.

against £1 6s. 1·03d. per ton in the preceding quarter, an increase of 5s. 3·87d. per ton treated. The cost per ton treated varies, according to the tonnage of accumulated slime treated in the plant in conjunction with the current ore. All the accumulated slime has now been treated, and in future all costs will be based simply on the tonnage of current ore crushed. This will make it easier to compare the results of different quarters. Capital expenditure: Amount spent during the period on account of main shaft, machinery, plant, buildings, etc., £9,114 13s. 7d. A stoping "suspense account" is now employed to deal with the broken ore in reserve in the shrinkage stopes. General.—The position of the mine, both above and below ground, is most satisfactory.

THE GEOLOGY OF THE VICTORIA TIN FIELD.—III.*

[By H. B. Maufe.]

Some Characteristics of the Reefs.—Whilst a number of the reefs are dykes, that is narrow vertical or nearly vertical bodies, many others would be more correctly described as sills, that is, they are flat or nearly flat bodies, and of a thickness very small in comparison with the area over which they extend. In several cases these sills dip at angles varying between 20 degs. and 30 degs. Sometimes the direction of the dip varies from point to point. This is noteworthy in the case of the best exposed sill in the district, which crops out in the northern part of Koestlich's claims. Under Mauve Kop and near the Gem mill the sill dips eastwards into the stream, then flattens, and finally rises with a westward dip as it is followed in the direction of the road to the Gem Mine. It probably averages 12 feet in thickness, but it is variable and seems to thin out in a northerly direction. Cassiterite is abundant in the walls of this sill, and owing to the low dip of the hanging wall is exposed over many square yards and makes a good surface show. Before this structure was realised, samples were taken in an approximately horizontal line across the outcrop, and so far as made known, gave very good results. It is clear that the value of the reef would have to be ascertained from samples taken vertically down the shafts. The flatness of many of the reefs does not detract from their possible value as tin-reefs, but it is of some importance that the fact be recognised from the first, as the case cited above shows. The tendency to flatness has the effect of making the outcrops very irregular. The outcrop of a sill with a varying dip on an uneven slope is naturally a sinuous one. Where these reefs crop out on ground heavily covered with residual accumulations of earth, the weathering phenomena are similar to those of many other rocks. At the surface are blocks of hard, fairly fresh rock; below is a white, gritty loam of decomposed pegmatite, forming a band descending in the enclosing red earth. On following this band down, it passes gradually into the hard pegmatite of the true reef. The explanation is that the rain water charged with carbonic acid and oxygen percolating downwards causes decomposition of some of the minerals and dissolves some of their constituents. A portion of this soil water is evaporated at the surface; more water is drawn up from below by capillarity and evaporated by the sun's heat. On evaporation, the dissolved salts are precipitated. Of these, silica, dissolved in the soluble form below by the decomposition of the felspars, is precipitated between the mineral grains, binding them together, and causing the rock to resist disintegration. These indurated portions form the hard blocks on the surface. If other salts are deposited, they may be dissolved again by the next rains and finally carried off into the streams, but the silica is precipitated in a form that is practically insoluble. Surface silification is sometimes evident to the naked eye; in other cases by means of the microscope only; in others again its deposition is largely a matter of inference. If the outcrop lie on even a slight slope, soil-creep may have taken place and the soft white decomposed pegmatite is drawn downhill and more or less mixed with the red earth. If the reef also had a low dip into the hill, the hard blocks on the surface may lie some little distance from the true outcrop. This has sometimes caused a perplexity, for the prospector, not realizing the flatness of the reef, has sunk a shaft below the blocks and thus experienced some difficulty in finding the reef. The majority of the reefs are between 6 and 15 ft. thick. Occasional larger ones are found, especially in the case of the "giant pegmatites" described above. A number of the reefs with a low dip, strike E.N.E.-W.S.W. and dip N.N.W. The vertical reefs strike in various directions, some across the formation, some with it.

Origin of the Pegmatite.—This is hardly the place to enter upon a discussion of the origin of pegmatite, but a brief statement of some modern views will serve to explain many of the facts detailed above. It is a generalization made from the study of plutonic rocks all the world over, that in the consolidation of a magma, the last minerals to crystallize are the more soluble and volatile constituents. By "soluble" is here meant, soluble in the magma, not soluble in water. We know from a study of volcanic phenomena and other lines of evidence that a number of volatile substances including fluorides, chlorides, borates and water are present in the magma, but occur in the solidified rock only in the smallest amounts, if indeed they are present at all. These constituents escape as gases or liquids during the final consolidation of the rock. The residual part of the magma, most of which has already consolidated as granite, will therefore be rich in the latest products of crystallization, in water and the other volatile constituents. As the granite becomes solid and cools down, fissures in it will be injected with the still fluid aqueous part of the magma, and these fissures will naturally appear most abundantly along the margins of the mass, where crystallization and cooling is most advanced. The magma may also be intruded into the surrounding country-rock, as dykes and sills. The pegmatites result from the crystallization of this residual aqueous magma, and during this crystallization the water and volatile constituents are driven off. The pegmatites are thus essentially igneous rocks, being related in composition to the parent magma, and behaving like dykes and sills. But the presence of much water and volatile substances during crystallization will explain some of their characteristics, such as the very coarse and variable texture, and the inconstant order of crystallization of their constituents. It is sufficient here to point out that different types of magma will give rise to different types of pegmatite, and that the type under consideration here is characterized by abundance of microcline and soda-lime felspar.

Origin of the Greisen.—It frequently happens that the steam and other gases driven off during crystallization re-act upon the minerals of the now solid and cooling pegmatite. This reaction, called pneumatolysis, may cause an alteration in minerals already formed, and also may be the means of introduction of new minerals, which would otherwise have passed off with the gases and steam. Just as different magmas give rise to different pegmatites, so they give off different gases, and various kinds of pneumatolytic action result. In the tin-bearing dykes here described we have noted the alteration of the alkali-felspar to lithia-bearing mica. This action is usually ascribed to the passage of fluorides and, of course, lithia in some form. The cassiterite is a newcomer, introduced at this stage, and it is thought to

* Reprinted from the Report of the Director of the Rhodesian Geological Survey, 1911.

be the result of the interaction of the volatile tin fluoride and water. The occurrence of tourmaline indicates the presence of boric acid amongst the mineralizers. The occurrence of cassiterite in a dyke is determined in the first place by the nature of the pneumatolytic gases driven off from the consolidating magma, and its distribution is governed by the passage of these gases. The variable character of the reefs is due partly to the same factors and partly to the original composition of the pegmatite, whilst their behaviour is dependent on the manner in which the country-rocks were fissured during the final stages of consolidation of the granite magma.

General Summary and Conclusions.

The Victoria tin-field consists of an area of metamorphic rocks belonging to the Epidiorite and Banded Ironstone groups, and bounded on three sides by a grey biotite-granite. Pegmatite dykes and sills are found along the margins of the granite and are also intruded into the metamorphic rocks at some distance from the granite. The latter dykes and sills are more or less altered to greisen and carry tinstone, whilst the former have not been altered and no tinstone has been found in them. The tin-reefs may be described as greisenized pegmatites. They belong to the same class as the tin-reefs of Enterprise, and the geological structure of the district generally is very similar to that of Enterprise. The characteristics of the tin-reefs are described and some explanation of their peculiar features is offered. As regards tin contents generally, the reefs do not seem to differ from those of similar types in other countries, that is to say, they are low grade rather than high grade. The prospects may be summed up by saying that they offer the possibility of fairly large low grade bodies being proved profitable to work.

THE GOLDEN VALLEY AND SHAGARI GOLD FIELDS.

Brief Survey of the District—A Wave of Activity—A Cluster of Promising Ventures.

The Hartley mining district continues to justify its reputation as a happy hunting ground for tributors and small mine workers. Although a number of properties in the vicinity of Hartley and Gatooma have within the last few years been transferred from the small syndicate to the large limited liability company, there are still a very large number of "small mines" working, and there is every reason for believing that the list will be augmented. In the Hartley-Gatooma fields few localities have come so rapidly to the fore as the Golden Valley and Shagari districts. A fairly good road has been made from Gatooma to the Golden Valley, and a journey along this makes it quite clear that

A Typical Rhodesian Mining Scene.

the owners of claims in the two districts are progressive men with progressive ideas. On all sides one sees material evidences of activity—new mills, new development schemes, new headgears, preparations for increased production and more extensive exploitation.

Gatooma to the Golden Valley.

A flying survey through these rapidly extending goldfields will best serve to indicate the present position and the outlook for increased production. Six miles from Gatooma is the Half-way House on the road to the Golden Valley, and a little further on, and a short distance from the road, are the White Rose claims, the property of Mr. J. Mack, where a 5-stamp mill from the Milky Way will soon be erected—these claims are most promising, and the trial crushings already made have turned out exceedingly well. Near these claims are the Choiseul and La France blocks, tributed from Messrs. Keegan and Way by Messrs. Buchan and Stone; all the machinery for these properties has been off-loaded, and the tributors expect to start crushing in three weeks. Three miles this side of the Golden Valley is the famous Masterpiece Mine, where a new and important strike is stated to have been made within the past fortnight, and near this property are the Luke claims, where a 3-stamp mill is crushing regularly. A short detour from the main road leads to the Kyrenia Primrose, tributed from the Bechuanaland Exploration Co. by Mr. J. Mack, who has just commenced milling.

The Turkois, Tea Reef and Other Mines.

Twelve miles from Gatooma is situated the Golden Valley Mine, also tributed by Mr. Mack from the Golden Valley G.M. Co., Ltd. This property has been a consistent producer for several years. Ten miles from the Valley is the Turkois Mine, the property of the Goldfields Rhodesian Development Co., Ltd. Here development is still being proceeded with apace, and work is now being carried on at a depth of about 400 feet, and values over a width of about 4½ feet, though not disclosed, are, it is understood, good. This reef has a tremendous strike, and reliable judges consider the whole line of country beyond the Turko's is a continuation of the Turkois reef itself. If this is so, it augurs well for the future of the Shagari district. Adjoining the Turkois is the Jane Anna, owned by the Rhodesian Mines Selection Co., and along the same strike are found the Dalny West, Dalny, Whistlecock, Tego, and Tego East. Near these properties is the site of the new Shagari Township, where several lots have already been taken up, and where a large brick store is being erected. A little further on is situated the Amarosa, where Mr. Wheelden's mill has proved a boon to several prospectors in the shape of trial crushings. Almost adjoining the Amarosa are the Mabel's Luck and Brilliant, owned by the Mabel's Luck Syndicate (Messrs. Stokes Bros. and Ward), which are under the management of Mr. Baillie M. Stokes. In the same vicinity are the Dawn and the Cheshire Cat, the former the property of the Associated Mines of Rhodesia, Ltd., and the latter of Messrs. N. A. Arnold and the Central Mining and Investment Corporation, both mines of excellent promise. Returning to the Turkois, a journey of about three miles off the main road, takes one to the Tea Reef. On this property, the owners of which are the Central Mining and Investment Co., Ltd., the stamps were last dropped at the end of last month; since then the mill has "found itself," and everything is now running smoothly under the management of Mr. Scholl. It is understood there is sufficient ore in sight to keep the present mill running for about three

years, and, while we have no actual knowledge of the values, it is believed they will prove somewhere in the neighbourhood of 10 dwts. The Amalgamated Properties of Rhodesia, Ltd., also have two engineers in the district, Messrs. Dickinson and Cartwright, inspecting the claims held by the Company.

Outlook for the District.

Our contemporary, the *Gatooma Mail*, to which we are indebted for much of the information contained in the above, in reviewing the outlook for these districts, says:—"To sum up, it is impossible for anyone to travel through the district without being immensely impressed with its possibilities for the future, and we incline to the belief that the hopes we hear expressed on every side are based on the solid foundation of proved facts, and are not the mere pious opinions of optimists. Another thing that impressed us considerably was the large amount of fine farming land met with all along the route, and once the water difficulty is overcome there should be a large increase in the number of farmers in the district. Messrs. Webb and Somerset have put down five boreholes, with excellent results, on their fine ranch near Shagari, and we imagine other boreholes in the district would be equally successful."

THE MINERAL OUTPUT OF THE UNION.

Some Impressive Totals.

The following figures represent the value of the mineral output for the four Provinces for the years 1910 and 1911:

	1911.	1910.
Transvaal	£38,892,500	£35,515,346
Cape	6,152,554	5,776,496
O.F.S.	1,829,159	1,667,802
Natal	805,072	714,605
Total	£47,679,294	£43,679,294

Of the total for last year no less than £35,049,041 represents gold and £8,746,724 diamonds. The gold output of the Union in 1911 was 36 per cent. of the world's production, which is estimated at £97,250,000. Gold was first discovered in South Africa in 1868, and since that year the total production of what is now the Union has been £325,102,222, practically all of it having been found in the Transvaal. The gold output of the Cape and Natal for the year was insignificant, amounting in value to only £310 and £7,246 respectively. The Free State produced no gold.

The diamond production for 1911 of the Cape, the Transvaal and the Free State—there are no diamond mines in Natal—is shown below:

Cape	£5,506,412
Transvaal	1,628,876
Orange Free State	1,611,436
Total	£8,746,724

Of this total De Beers was responsible for £4,950,538, the Premier Mine for £1,424,965, and the New Jagersfontein for £1,052,642. The quantity and value of the coal output of the four Provinces were as follows:—

	Tons.	
Transvaal	4,343,680	£1,020,539
Cape	89,023	51,550
O.F.S.	482,690	137,616
Natal	2,670,551	725,448

The value of Cape coal is given at 11s. 6d. per ton as against 4s. 8d. for Transvaal, 5s. 8d. for O.F.S., and 5s. 5d. for Natal coal, the high price of the former being "due to the absence of competition as met with in the other Provinces." 1,426,586 tons were disposed of for bunkers; and the export for the year amounted to 82,536 tons, of which 32 per cent. went to the Straits Settlements, 29 per cent. to East African ports, and 18 per cent. to India and Ceylon. Of the other minerals, the most important were copper and tin, the value of the shipments being £552,145 and £411,871 respectively. Most of the copper comes from Namaqualand and most of the tin from the Transvaal. Lime to the value of £135,193 was produced during the year, the bulk of it being from the Transvaal. The production of salt (from "pans") within the Union amounted to 40,498 tons, of which the Transvaal was responsible for 1,557 tons, the Cape for 17,794 tons, and the Free State for 21,147 tons.

INVESTORS' DIARY.

The following company meetings have been announced:—

Oct. 19.—Wolhuter G.M.
Oct. 23.—Johannesburg Consolidated Investment Co.
Oct. 29.—Jumpers G.M.Co.; Zaaiplaats Tin Mining Co.
Oct. 30.—Rooiberg Minerals; Nourse Mines; Western Rand Estates.
Nov. 6.—New Modderfontein.
Nov. 27.—New Boksburg G.M.; Rand Klip.

Petroleum.

Mining Cases in the Courts.

Ex Parte the Master (in the matter of the Waterberg Gold, Land Investment and Exploration Syndicate, Ltd., in liquidation).

The Master applied for the public examination under Section 124 of the Companies' Act of Alf. Goldberg, R. Paterson, S. Ryan and G. Smith, in regard to their conduct of the affairs of the company. The Master alleged that the company had committed a fraud. On the motion of Mr. G. E. Barry, the application was granted, the date of the examination to be fixed by the Magistrate in Johannesburg.

Three facts regarding the Transvaal worth remembering:

(1) The Transvaal is producing over one-third of the world's gold output.

(2) Transvaal mines have spent 24 millions sterling on machinery and plant.

(3) The *South African Mining Journal* is the official organ of the Mine Managers' Association.

Correspondence and Discussion.

Comments on Questions Arising in Technical Practice or Suggested by Articles in the Journal—Views, Suggestions and Experiences of Readers.

Inspectors of Mines.

To the Editor, *South African Mining Journal.*

Sir,—Will you kindly inform me, through your journal, if the appointments of assistant inspectors of mines have been made. As I am an interested party, you will understand that I am anxious to know.—Yours, etc.,

B. F. W.

[We have not been informed of any appointments having been made yet.—Ed. *S.A.M.J.*]

Penwith-West Rand Unified.

To the Editor, *South African Mining Journal.*

Sir,—Can you kindly give me the following information in your journal. I have been offered fifty Syndicate shares in the New Penwith Gold Mining Syndicate at £1 each. The New Penwith was taken over by the West Rand Unified, and for one Penwith share of the issued value of £1, four 2s. 6d. shares will be given in the West Rand Unified. Do you consider the said Syndicate shares worth the price of £1 each? By giving me this information you will greatly oblige an

OLD READER.

Pretoria, September 21, 1912.

[Perhaps some other reader will help us to answer this query?—Ed., *S.A.M.J.*]

Cape Tin Deposits.

To the Editor, *South African Mining Journal.*

Sir,—In the interesting article on the Cape tin deposits in your issue of the 14th inst., after alluding to the different reefs on the range of hills above Langverwacht and to those on the Vlaggeberg, a statement was made that the most important lodes are evidently those which crop out along the western side of the range above Langverwacht, and to substantiate this statement mention was made of the poorness of the alluvial wash on the slopes of the Vlaggeberg, namely, on Uiterwyk (referred to as Uitkyk in your article). I quite agree with you that the alluvial on Uiterwyk is poor, compared to the richness of the Langverwacht deposit, but it does not necessarily follow that the reefs must be poor. Other considerations have to be taken into account, which may explain the comparative poorness of the alluvial, such as the steepness of the slopes and, the most important, the extent of denudation of the rocks. I submit that considerably less denudation has taken place on the Vlaggeberg than on the range above Langverwacht. For instance, on the Vlaggeberg a quartz reef, highly mineralised with wolframite, crops out for hundreds of feet in its unbroken course. No other outcrop of quartz reef to that extent have I been able to trace on any other ground in the district. Further on you state that the fissures in this region appear to have no systematic arrangement, circumstances which have led to the statement that the country in that neighbourhood is much broken, although the writer of the article does not think that there are solid reasons to come to this conclusion, and I quite agree with him. In my letter addressed to you a few months ago, and published in your issue of the 13th July last, I adduced as evidence, in contradiction of the statement that the country is broken, that on the Vlaggeberg there were two reefs running parallel at some 150 feet distance (one of which is the reef above alluded to). Below the lower of these two bodies, on the slope of the hill, an adit was driven at right angles to their strike, and in this adit four veins were struck, striking and dipping the same as the two bodies higher up the hill. Strike N. 23° W.; Dip 80° E., 23° N.—I am, etc.,

S. S. KEYZER.

68, St. George's Street, Capetown,
September 20, 1912.

Steam v. Electric Hoists.

To the Editor, *South African Mining Journal.*

Sir,—The question at present occupying the minds of the mining public is, Are electric hoists safer than steam hoists? I will try and show that all safety, when winding persons, and especially where single skip or cage is the practice, goes unflinchingly in favour of the steam hoist. I will explain from a driver's point of view the difficulties that one must be prepared to face, and suggest some improvements that may be useful in cases of emergency. The steam hoist, as a machine of safety, is ever so much more reliable than present-day designs of electric hoists. I hold that although electric hoists are masterly and ingeniously constructed, and, from a driver's point of view, look ridiculously simple, that they require the care never before needed in manipulating any other kind of hoists. The driver of a steam hoist, when he is winding with both skips, depends, in cases of emergency, on his reversing lever to bring his skips to a quick stop. A driver knows when he puts his reverser against the winding direction of his engine that he has turned his engine into a compressor, and if his engine does not stop at the right mark, he can give her some steam. Now, I have mentioned the foregoing by way of showing that no matter how quick a driver may manipulate his levers, the risk of losing the generated compression energy, at any time acting against the running direction of his engine, is nearly impossible; if, however, you have a blow-off valve (as provided on some electric hoists) or a valve connected to the atmosphere which would alter your compression or generated energy *which has* attained a certain limit, change or blow-out to the atmosphere, the result of such a sudden relief would make it impossible for any driver to know when his skips would stop, due to the engine losing the compressed energy, and suddenness is the danger of electric currents.

Now let us take a steam hoist with one skip unclutched, and see how faithfully it serves in moments of extreme, and sudden, danger; say the engine is lowering a skip load of steel, and at once the main steam pipe bursts, does that mean danger if the brakes are out of order, or unable to hold the accelerated weight? No, for the driver can move his reversing lever over against the running direction of his engine, and before the skip will travel far the terminal compression pressure that will generate in the steam chest and throttle pipe, if the valves are in good condition and the throttle kept shut, will overcome the load, no matter how heavy, and without the aid of brakes the driver could be in a position to control his engine by simply opening and shutting his relief valve, allowing excess pressure to escape until the skip has landed safely at the bottom of the shaft.

I will now take electric hoists, winding double, and as a driver comes near his retarding mark he pushes over his controller and shuts off his current. The sensitive machine answers his call at once and slows down (safe). When you shut off all the steam on an engine it runs on some running till the lip is reached without the use of any more steam, and not until the reversing lever is pushed over do you set up a generating action; with an electric hoist you set up a partial generating effect immediately you attempt to shut off current. The best way I can explain the actions of both

steam and electric control is by comparing the reversing lever of an engine to an electric hoist. I will take an engine with no throttle valve, and work it with the reversing gear only; as the skip ascends the lever is linked gradually against the running direction of the engine until the centre of the quadrant is reached, and we find that all steam is shut off from the cylinder. In the process of doing this we cut off the steam gradually, at the same time setting in gradual compression until the reversing lever is against your engine, and the steam is thus against the running direction of your piston, and will stop its motion; then finally reverse your engine. This operation can be done no matter how fast your engine may be travelling, and it is obvious that the reaction, though enormous, the dangers of blowing out valves are not very much.

Now, take electric hoist control, and you find the same action. As soon as a driver moves the controller towards the centre of the quadrant he is gradually cutting off current, and also setting up partial generating efforts until the lever is finally in centre; then the operation is complete that makes the hoist a generator, and if you push the controller over the centre, like a engine reverser, you change the flow of power against the running direction of your hoist, and if the reaction is likely to exceed the limits your overload switch can bear, the results of having accumulated energy will depend on where the skips are and the speed they are travelling at. I would advise drivers to be careful when they see that they have been too late in retarding, and slightly apply the brakes, for by doing so they will stop the high generating effects that would otherwise set in, and blow out the switch.

I will now take an electric hoist single drum and compare it with the engine load of two or three tons of steel. In most cases you must give current before you can get any speed when descending, for by giving your electric hoist current you counterbalance the generating effects, although you never can get rid of it unless you have current, by accident or overload. Now, when a driver is going down a shaft with a load, and has given himself sufficient time to retard within the limits of his overload switch, and as most drivers will do, instead of applying his brakes to present reaction, draws over his controller, and direct a flow of current against the running direction of his hoist, with the result that he will blow out his main switch, I leave it to those who have an idea of machinery what will happen even if the brakes have been tested, and are capable of holding the full power of the generator motor. The accelerated speed will be three or four times the standing weight of the skip, and it is not a question of a runaway hoist, but is equal to an unclutched drum. No brake test can ascertain my conditions under so deceiving a circumstance, and it is clear that without some compression factor travelling in single drum or unbalanced electric hoists is dangerous without continuous current. Unless some provisions are made for emergencies in cases where men are being hauled, I am afraid that every member of the travelling mining public can bid a long farewell to the feelings of security they have enjoyed under steam on the engines that have always been useful in cases of sudden emergencies. I will make the following suggestions for engineers who are working with electric hoists: (1) Instead of setting the overload switch to blow off the current at, say, 3,500 amps., and instead of having the brakes (magnetic) operated when the current goes off, do the following: Arrange the wiring from your overload switch so that instead of the current going off first the magnets will operate first at 3,250 amps., if the brakes go on first the possibilities are that you may save the overload switch from "tripping" by having it set at 3,500. If your hoist should lose its current it is obvious that the speed has got a good shock through having both brakes and current on at the same time, instead of wildly racing down the shaft till the driver realises what has gone wrong. (2) Arrange a box suitable to contain resin finely ground, and have it fixed so that from the driver's platform it can be manipulated the same way as a loco. driver liberates sand on the rails. (3) The practice of winding single drum should be prohibited when hoisting men, for if the brakes are not in extraordinary good order, and the current goes off suddenly, there are no provisions, as yet, that could cause a generating effect. There are some ways, and here is one which is only a matter of adjustment, i.e., storage battery; that if the current should go off automatically the change over to the storage battery would also be automatic, and by this method we get a real reproduction of the steam engine, and could then depend on getting a resistence independent of the brakes.—I am, etc.,

ENGINE DRIVER.

New S.A. Companies Registered in London

TRANSVAAL MICA COMPANY.

This company was registered on August 24, with a capital of £30,000 in £1 shares, to carry on the business of miners, prospectors, explorers, metallurgists, refiners of and dealers in and preparers for market of ores, metals, and mineral substances, etc., to acquire mines, mining rights, and metalliferous land in Transvaal or elsewhere, and to adopt an agreement with S. Munn. Minimum cash subscription, £7. The number of directors is not to be less than two nor more than seven; the first are not named. Qualification £100 shares or stock. Remuneration, £100 each per annum (£150 for the chairman). Registered office, Cross Keys House, 56, Moorgate Street, E.C.

BUCKLANDS ESTATE AND DIAMOND COMPANY.

Registered August 20. Capital, £50,000, in 5s. shares. Objects: To take over from the Vaal River Diamond Company, Limited, the freehold farm Bucklands, in the division of Barkly, Griqualand West, Cape Province, to acquire any other lands and buildings in South Africa or elsewhere, and to carry on the business of builders, contractors, decorators, merchants, diamond and general miners. Minimum subscription, 100 shares. First directors (not less than two or more than five): H. C. Emery, G. F. Davenport, and W. Wroe-Johnson. Qualification, 100 shares. Remuneration £100 each per annum (£50 extra for the chairman) and a percentage of the profits. Under draft agreement with the Vaal River Diamond Company, Ltd., the price payable to vendor company is £30,000, to be satisfied by the allotment of 120,000 fully-paid shares. In order to provide working capital for this company, the said vendor company has entered into an agreement with the H. V. Syndicate Ltd., whereby, in consideration (*inter alia*) of the conditional allotment to the Syndicate of a further 40,000 fully-paid shares in this company, the syndicate has undertaken to secure the subscription at par of a minimum of 8,000 shares in this company, and, contingently, of further shares. To remove any doubt as to the effect of section 89 of the Act upon the validity of this transaction, the articles specifically authorise the directors to issue to the syndicate the said 40,000 fully-paid shares by way of commission. Whenever, subsequently, the company offers any of its shares for subscription, the directors may pay a commission not exceeding 50 per cent. Secretary, J. Greenhill. Registered offices, 423, Mansion House Chambers, E.C.

CAPE OSTRICH FEATHER COMPANY.

This company was registered on August 29, with a capital of £1,500 in £10 shares, to carry on the business of manufacturers of and dealers in feathers and hard and soft goods, costumiers, milliners, tailors, hatters, outfitters, etc. Private company. The first directors are to be appointed by the signatories. Qualification, one share. Remuneration as fixed by the company. Registered by H. C. Mossop & Co., 79, Queen Street, E.C.

GERMAN AFRICAN TINS.

This company was registered on August 28, with a capital of £10,000 in £1 shares, to carry on the business of tin and general miners, prospectors, explorers, traders, merchants, agents, etc., and to adopt agreements (1) with H. Moss and C. A. Russell and (2) with Tin Lands Limited, relating to the development of certain mining properties in German South-West Africa and the acquisition of certain interests therein. Private company. The Nigerian Tin Trust and Exploration (1912), Limited, are the first managers. Registered by Bradle, Thorne, Welsford, and Sidgwick, 22, Aldermanbury, E.C.

THE WEEK IN THE SHAREMARKET.

Steady but Quiet—Specialities Firm—Tins Still Weak.

THE keynote of the market this week has been quietness, combined with firmness. In State Mines, Van Ryn Deeps and some of the tin stocks business has been fairly brisk, but the continued weakness in Zaaiplaats has depressed all the latter variety. Randfontein Debentures have firmed up, and, without much business, all the gilt-edged Rand stocks have been steadier. All the far East Rand counters are being quietly picked up, and are regarded as likely to be among the first to appreciate. The whole outlook remains very favourable.

	* Friday. 20th	* Sat., 21st	* Monday, 23rd	* Tuesday, 24th.	Wed., 25th	Thurs 26th.
African Farms ...	17 6	...	17 0B	17 0B	17 0B	17 0B
Adair-Usher Process	...	...	...	1 6S	...	..
Apex Mines ..	31 9B	...	32 0B	32 0B	33 0B	32 0B
Aurora West ...	...	...	10 0B	10 0B	10 0B	10 0B
Bantjes Consolidated	...	...	25 0B	..	25 6	25 0B
Benonis	5 6	...	5 0	4 11B	4 10B	4 9B
Bushveld Tins ..	1 1B	...	1 1B	1 1	1 0B	1 0
Brakpan Mines ..	80 0B	...	79 6B	81 0B	82 6B	83 0B
Blaauwbosch ..	26 0B	...	26 0B	26 6B	26 0B	25 6B
Cinderella Cons. ...	24 0B	..	..	...	..	..
City and Suburban ..	46 0B	...	46 0B	47 6	47 3	47 0B
City Deeps ...	62 6	...	...	62 6B	64 6B	64 6B
Cloverfield Mines ..	7 0	...	7 5	7 8	8 0	8 0
Cons. Langlaagtes ...	28 9	...	29 0	29 3	29 3	29 3
Cons. Main Reefs ...	19 3B	..	19 6	19 3B	19 6	19 6B
Coronation Freeholds	0 7	...	0 6B	0 6B	0 7	0 6S
Con. Investment ..	...	...	..	...	..	22 0B
Crown Mines	...	...	143 0B	143 9B	143 9B	145 0B
Concrete Cons ...	...	...	...	...	8 0	...
Cons. Mine Selections	..	...	15 0B	...	14 6S	..
East Rand Cent. ...	13 0	..	13 0B	13 3B	13 6	13 6
East Rand Coals ..	2 6B	...	2 6B	2 6B	2 6B	2 5B
East Rand Deeps ..	2 9B	...	...	2 9B	2 9B	2 9B
East Rand Props. ..	...	...	59 0B	..	58 0B	60 0S
East Rand Deb ..	£93½	...	£96	£93	£93	£93
Eastern Gold Mines	2 1B	...	2 2B	2 4B	2 4B	2 4B
Frank Smith Diam...	10 6	..	10 3B	10 6B	11 0	10 6B
Govt. Areas	25 3B	..	25 3B	25 6B	25 9	25 3B
Glynn's Lydenburgs	...	..	27 0B	29 0S	27 0B	27 0B
Glencairns	...	...	3 9B	4 0S	3 9	...
Glencoe (Natal) Colls	6 3B	...	6 6B	6 6B	6 6B	6 6B
Geduld Props. ...	...	...	26 0B	...	27 0B	..
Hex Rivers	0 10B	...	0 10B	0 11B	1 0B	1 0B
Jupiters	10 6B	...	10 6B	10 6B	11 0B	11 0B
Kaalfontein Diamonds	0 3B	..	0 3B	..	..	..
Klerksdorp Props. ..	3 0B	..	...	3 0B	3 0B	3 0B
Knight Centrals ...	14 9	...	14 9	14 6B	14 6	14 3
Luipaardsvlei Estates	...	...	..	13 6S	12 9S	11 3B
Lace Props.	4 10	...	4 10B	4 10B	..	4 9B
Lydenburg Gold Farms	2 9B	...	2 8B	2 8B	...	2 8B
Main Reef Wests ...	22 6	..	22 6B	22 0B	22 0B	22 0B
Modder B's	70 3B	...	70 3B	70 9B	70 6B	71 0B
Middelvlei Estates ..	1 6B	..	1 7B	1 6B	1 6B	1 6B
Modder Deeps ..	38 9B	...	39 6	39 6B	41 0	40 6B
Meyer & Charltons...	..	...	100 0B	101 3B	101 3B	...
New Eras	8 6B	...	...	8 6B	8 3B	8 9B
New Kleinfonteins ..	27 6B	...	28 9	28 0B	28 9B	29 0
New Rietfonteins ...	8 0S	..	7 6B	7 6B	8 3	8 0B
New Boksburgs ..	2 0B	...	..	..	2 1B	..
Nigels	20 0S	..	...	20 0S	20 0S	20 0S
New Geduld Deeps...	2 7B	...	2 8B	2 9B	2 9B	2 9B
Nourse Mines ...	38 0B	..	38 9B	38 9B	39 0B	39 0B
Orange Diamonds ..	1 8B	..	1 6B	1 6B	1 6B	1 7B
Premiers Deferred	...	...	..	..	250 0B	...
Pigg's Peaks ...	16 6B	...	18 0B	18 6S	...	19 0S
Pretoria Cement Co.	54 6	..	55 0B	57 6B	57 6B	57 6
Paardekraal Estates	.	..	...	...	0 6B	1 0S
Potchefstroom Est....	1 3B	...	..	...	...	...
Princess	12 0B	..	12 0B	12 0B	12 0B	12 0B
Premiers Preferred	...	..	175 0B	175 0B	175 0B	175 0B

B Buyers. S Sellers.

	Friday 20th	Sat. 21st	Monday 23rd.	Tuesday 24th	Wed. 25th	Thurs. 26th
Rand Nucleus ..	3 3B		3 3B	3 3B	3 3B	3 3B
Randfontein Estates	32 0B	...	33 3B	33 0B	31 3	32 9B
Randfontein Deeps ..	6 0S	..	5 6B	5 6B	5 6S	5 6B
Rooiberg Minerals	30 9B		31 6	31 0B	31 9	31 6
Rand Klips			5 4	5 0B	5 6S	5 3B
Ryan Nigels ..	3 9B	..	4 0B	4 0B	..	
Roberts Victors ..	28 0B	.	29 0B	32 6B	33 0B	35 0B
Rood. Durban Deeps	27 6B	..	27 6B	27 6B	27 6B	27 6
Simmer Deeps ..	4 6S	..	4 6S	.	4 6S	4 6S
South African Lands	4 7B	..	4 8B	4 9B	5 0S	4 10B
S Randfontein Deeps	4 3B		4 6	4 0B	...	..
Sub Nigels	8 2B	.	8 9	9 0	9 0B	9 6
Springs Mines ...	17 6B		17 6B	17 6B	18 0B	18 3B
S. A. Breweries ...	..	..	...	.	39 0B	39 0B
Shebas	5 0B		5 0B	5 0B	5 0B	5 0B
Swaziland Tins	..		35 0S	..	..	..
Trans. G.M. Estates	58 0	..	57 9	57 6B	57 0	
Trans. Coal Trusts ..	49 0B	..	49 0B	49 9B	51 3	51 0B
Tudors ..	1 6B	..	1 6B	1 6B	1 0S	1 6B
Trans. Cons. Lands	32 0B	...	..	..	33 0B	33 0B
Van Ryn Deeps ..	19 9	...	20 3	20 0	20 0	19 9
Villiage Deeps ...	...	..	43 9B	..		..
Vogel Cons Deeps...	1 3B		1 6B	1 3B	1 2B	...
Van Dyks	..	.	..	3 6B	.	
Village Main Reefs	48 0B		49 6B	..	51 0B	50 6B
Witwatersrands ...	59 0B	.	60 0B	..	61 6B	61 0B
Wolhuters ..	20 9B	...	20 9B	20 9B	20 9	..
Witbank Collieries ..	43 0B		43 0B	43 0B	..	43 3B
Wit Deeps ..	55 0B		58 0S	55 0B	55 0B	.
West Rand Est. ..	4 0	..	...	3 9B	3 6B	..
West Rand Con. ...	16 6B	..	16 6B	17 6	17 4	17 0
Zaaiplaats	31 0	...	28 9	27 0	29 6B	27 6

B Buyers. S Sellers.

New Cape Companies.

The Oudtshoorn Theatre Co., Ltd., registered office, Oudtshoorn. Subscribers: V. H. North, W. L. Yeo, J. Warren and [illegible] others. Capital, £5,550. Registered, August [illegible]th.

Magic Foot Draft Co. (S.A.), Ltd., registered office, Capetown. Subscribers: A. Gray, W. Barlow, D. Easton and four others. Capital, £6,000. Registered, August [illegible]th.

The East London Engineering Co., Ltd., registered office, East London. Managing Director, F. D. [illegible]. Capital, £8,000. Registered, August 15th.

Irvin & Johnson, Ltd., registered office, Capetown. Directors, G. D. Irvin, C. O. Johnson, W. B. [illegible] and J. G. [illegible] Horst. Capital, £125,000. Registered, August 31st.

The Hopetown Irrigation and Farming Co., Ltd., registered office, Hope Town. Directors, J. G. B. Watney, P. J. van [illegible], L. J. de Jager and three others. Capital, £[illegible]. Registered, August 16th.

Carlton Service (Africa), Ltd., registered office, Capetown. Managing Director, James Inglis. Capital, £1,000. Registered, August 24th.

INCREASE OF CAPITAL.

Union Meat Co., Ltd.: from £6,[illegible] to £[illegible]. Registered, August 23rd.

Oil.

Engineering Notes and News.

Harnessing the Sun.

After many years of experiments, a method has at last been discovered of harnessing the power of the sun. We have more than once referred to the experiments which were being made, and in a recent number of the *Engineer* there is an interesting account of a "sun engine," the invention of Mr. Frank Shuman, of Philadelphia. The engine, it is said, develops 32 horse-power during the hottest part of the day, which gradually decreases as the afternoon passes. "Of course," says the *Engineer*, "everyone recognises, and no one more than Mr. Shuman, that it has a limited scope. No one expects to see sun plants in use in England, or even in Europe; but in tropical regions, say, for 20 degrees on either side of the Equator, it becomes a practical proposition. For in that area not only may plenty of sunshine be relied upon, but oil and coal are expensive, and where coal or its equivalent cannot be purchased for less than 10s. per ton the sun-power plant has its chance. Another thing is also to be remarked. Sun-power, like wind-power, being inconstant, the most profitable use to which it can be put is pumping, and in tropical countries a great need for water-raising machinery for irrigation purposes exists."

Apparatus for Control of Over-speeding and Over-winding in Winding Engines.

Particulars of some of the appliances recently introduced for prevention of over-winding and of undue speed in winding have been obtained from the patentees and manufacturers, and are submitted by the Westralian Mines Department Report, in the hope that the information may be of service to mine owners and managers who may be looking for such devices. Of Melling's Controller for the prevention of overspeeding and overwinding in winding engines, made by the Worsley Mesnes Iron Works, Ltd., Wigan, England, that firm says:—"We claim for our gear that it is absolutely reliable, and after two years' continuous working this has proved to be the case at every mine where we have them installed. Since January, 1910, we have installed or have on order 27 of these gears. All wearing surfaces about the machine are made of ample area to prevent wear, and all pins and contact points about the machine are case hardened. The governor is extremely sensitive and is adjusted so that if the maximum working speed of the engine is exceeded by even one revolution per minute, the gear is brought into operation, but in no case does it interfere with the engineman's control over the engines, or hamper him in any way. This gear is for the purpose of making safer the working of winding engines (1) by providing means for controlling and stopping the engines in the event of an engineman failing to do so at the right time; (2) by controlling the speed of the engines during the wind to that which is fixed to be the maximum; (3) by gradually reducing the speed of the engines when nearing the end of the wind if the engineman has failed to do so; (4) by effectually stopping the engines when the extreme limit of the cage's movement is reached; (5) by stopping the engines at once by means of the emergency portion of the gear, should the engineman start them in the wrong direction. The overwinding gear for the above is made by preference in the horizontal type, but can be fixed vertically if desired. The gear can be placed either at the side of the engines or between them, and can be fixed very readily on the engine-room floor."

S.A. Institution of Electrical Engineers.

Mr. J. H. Rider presided at a meeting of the S.A. Institute of Electrical Engineers, which was held in the lecture theatre, School of Mines, last week. A paper was

read by Mr. S. E. T. Ewing on "Some Practical Aspects of Electric Winding." The author pointed out that electric winding from deep shafts had come into very general use on the Rand during the past three years, and owing to the importance which the maintenance of the winders had attained amongst the other mine duties of engineers, he had ventured in his paper to bring to notice some of its more practical aspects. Mr. Ewing dealt with the comparative economy of different types of winding engine, treated in detail of safety devices, and devoted some attention to electrically-driven haulages. He stated, *inter alia*, that experience so far went to show that the liability of electric power supply to sudden failure introduced no element of risk into winding when properly-designed appliances were used. The conditions of shaft-sinking, however, called for special precautions against the possibility of stoppage during the time that elapsed between the signal to light up and the drawing away of the bucket with the miners from the bottom. A paper entitled "Practical operation of the three-phase hoists at the Bantjes Consolidated Mines, Ltd.," by Mr. J. Askew, was read by the secretary (Mr. F. Rowland) in the absence of the author. This contribution gave a close description (in highly technical terms) of the three-phase induction motor hoists with which all the winding on the Bantjes property had been done for the last sixteen months. There was little discussion, members apparently being desirous of reserving their criticisms for a subsequent meeting. The chairman voiced the feeling of those present in expressing thanks to Messrs. Ewing and Askew for their papers. Mr. Rider announced that a meeting of the students' section of the Institute would be held in the secretary's office on Wednesday, September 25, at 8 p.m. At this meeting debate will be continued on the contribution by Messrs. Barnett and Marson to the discussion of "electric traction." A paper on "Three-Phase Motors" is promised by Mr. E. D. Brunner.

New Patents.

454. Harry Pauling.—Improvments in electrodes for effecting gas reactions.
455. Arthur Harry Wright.—Improvements in machines for marking mail matter.
456. Louis Robert Vierdag; Albert Edward Dougherty.—Extracting oil out of maize (mealies).
457. William George.—Improvements in tamping shot holes.
458. William George.—Improvements in sleepers.
459. Alfred George Newkey Burden.—Improvements in ore feeders for stamp mills.
460. Frederick Retallack.—Improved septic tank for treatment of sewage.
461. Edward Henry Woodman and Johan Edward Stone.—Roller key for pulleys.
462. Thomas Stothert McLaren.—Electro Thermo incubator.
463. James Grant Gibson and Hans Gluck.—Improvements in tube mills.
464. Hans Nordrok and Gentil Prelle.—Improvements in ore feeders.
465. Robert Rodger.—Improvements in mills or apparatus for reducing ore or other materials.
466. Richard Henry Vineer and Henry Arthur Young.—Improvements in cigarette packets or containers.
467. Jacobus van der Walt.—Improvements in animal traps.
468. Maurice Leblanc.—Automatic balancers for rotating bodies.
469. Bryson Duncan, and Francis Lockhart Duncan.—Improvements in the wheels of road vehicles.
470. The Sandycroft Foundry Co., Ltd., and Thomas Murthwaite Dutton.—An improved device for elevating liquids and solids.
471. Johannes Ludowicus Steyn.—Steyns racemic spirits, brandies, and vinegars.
472. John Sachs.—A new and improved chemical preparation for sweetening purposes and mode of manufacturing same.
473. George Newman.—Dust and smoke allayer.
474. Wilhelm Mauss.—Improvements in mountings for percussive coal cutters and the like.
475. Friedrich Uhde.—Improved process for producing ammonium nitrate.
476. Max Taitz.
477. Donald Barns Morrison.—Improvements in steam regenerative accumulation and water heater.
478. Alexander Collier and William Arnott.—Steel cylinder rock crushing mill.
479. John Murphy.—Apparatus to be used in conjunction with rock drills for the removal of dust caused by their use, and as a prevention of miners' phthisis; also as a means of ventilating.
480. Ernest Joseph Nason.—Improvements in screens for exhibiting pictures.
481. Wylie Gemmel Wilson.—Machine for moving and depositing concrete and other material.
482. Thomas Cooper.—Improvements in the manufacture of sleeves used in roller or ball bearings for axles, shafts, and the like.
483. Alfred McCloy, and Charles Christopher Abbott.—Improvements in apparatus for pickling or treating seed grain.
484. Mathias Pier.—Improvements in or relating to the manufacture of ammonia.
485. Rudolf Weyel.—Improvements in or relating to the production of nitro-glycerine.
486. Griffith Morris.—Profile registering instrument.
487. William George.—Improved spring catch lubricating cup.
488. Ernest Henry Hobling.—Improvements in the construction of blinds and screens.
489. James Hamilton Anstruther Macadam.—Improvements appertaining to tube mills and the like.
490. George Gilbert Carter.—Improvements in acetylene lamps.
491. George Gilbert Carter.—Improvements in acetylene lamps.
492. James Eason and John Hawthorne Wilson.—Improvements in conical plug cocks.
493. Henry Cecil Hellier Bartlett.—An improved method and means for purifying and cleansing air forced into mines and the like.
494. Wilhelm Gerlach.—An elastic and ventilated head for boots and shoes.
495. Rupert Donald Alexander, Joseph August Rolando, Peter David Voight Alexander, and Charles Henry Hilditch.—Improvements in safety appliances for mine cages, skips, and the like.
496. Donald Hubbard.—Improvements in valves or devices for supplying air in the treatment of slimes and the like.
497. Alexander McNamara.—Improvements in bits for rotary drills.
498. Albert Thomas Harris, and Charlton Effingham Wollarton.—Improvements in spray nozzles and atomizers for liquids.
499. Albert William Smith.—Improvements in methods of extracting gold.
500. Wolf Lanfer.—Process for the production of artificial stones from natural rock wastes.
501. J. Stone and Company, Limited, and Alfred Henry Darker.—Improvements in and relating to fans or ventilators driven by electric motors.
502. Mary Ann Gregory and George Robert Gregory.—Improvements relating to locomotive boiler furnaces.

Specimen copies of the *S.A. Mining Journal* can be had from our new offices at 125, Salisbury House, London Wall, E.C.

Finance, Commerce, and Industries.

Germany and Electrical Export Trade.

Commenting on the recent progress of the German electrical machinery industry, which represents one-third of the national production, and in particular of the export trade, the *Electrotechnische Zeitschrift* points out the misleading character in this case of round figures, as a large portion of the cost of electric installations is represented by non-electric machinery, such as boilers, engines, rails, cars, etc.; also by accessory objects, such as porcelain insulators, carbons, accumulators, standards, etc. Of a normal month's shipment of electrical exports, less than half are represented by electrical machinery, fully two-thirds being composed of cables, lamps, carbons, accumulators, and accessory material. In electric installations generally, strictly electrical machinery —dynamos, transformers, motors, etc.—constitute actually only one-tenth of the total outlay. In this relatively restricted field, nevertheless, German industry has made great strides, and as regards the foreign trade, by dint more especially of, judicious capital investments. "There is," says our contemporary, "no other (German) industry which has made, and still makes, such large investments of capital abroad as the electrical. We need only to consider the foreign investments of the big German banks, or of the two great electrical concerns, A.E.G. and S.S.W. and their daughter companies, or the share of the Felten and Guilleaume concerns in the trans-Atlantic cable companies called into being by them, to recognise what German capital and German enterprise have effected abroad. The German electro-technical industry has everywhere abroad where a possibility was offered, and where the anti-German animus or tariff barriers were not insurmountable, and especially on the European Continent and in South America, created the largest of installations. In English South Africa, by the lucky combination of German and English capital, the way has been opened to German industry, of which the great Victoria Falls power station is only one example; albeit the entry of our manufactures into English Colonies generally is much handicapped by the preferential tariff which the Motherland enjoys. In none of these lands, as indeed universally, are we loved, and products 'Made in Germany' are only taken there when they are actually better, and the personal advantage of the buyer stills his national hate. North America will always be a closed field to us, for a lightening of the import tariff—as our exclusion from the San Francisco Exhibition also showed—will never be made. North American industries suffer too much from excessive over-production to be likely to facilitate the competition of one of their largest world competitors. From the foregoing it may be seen that the German electro-technical industry, especially in the last decennium, has attained respectable dimensions, and it may be concluded that, with the inclusion of new fields, as, for instance, that of main railway construction, a steady growth is assured."

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S.A. Mutual.

Mr. G. W. Steytler, presiding at the annual meeting of the South African Mutual Life Assurance Company, at Capetown, this week, said the accounts for the past year showed a slightly upward movement in the interest rate, and the ensuing year would probably produce a further small increase owing to the demand for money being firmer than it had been for some years. In this connection, the chairman stated that it might be as well to emphasise a warning as to the abnormal increase in the prices paid for farms in many portions of the Union. The increase in most instances had been too rapid to be due to actual development, and it would be specially unfortunate if at this time, when the farming industry was undoubtedly [illegible] lative buyers should [illegible] rash dealings. In [illegible] of a recovery from the effects of the [illegible] ago, and it was to be hoped that the [illegible] be spared the experience [illegible] farming should take its place as the leading [illegible] country was in every way desirable, but [illegible] it should advance on [illegible] conservative [illegible] stitutions should [illegible] in the matter of investments. Mr. [illegible], a vote of thanks to the chairman, remarked that he [illegible] concurred with what the chairman had said [illegible] sised that in their society all had [illegible] Africans, he added, were all fond of talking [illegible] South Africa and then rushing to join a foreign [illegible]

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Commercial Travellers in German S.W. Africa.

Notification has been received of the issue of an Ordinance, dated June 11, 1912, for the regulation and taxation of the trading operations of hawkers, owners of peripatetic stores, and commercial travellers in German South-west Africa. The regulations affecting commercial travellers visiting the country on behalf of British firms not established in German South-west Africa, provide that such travellers must obtain a certificate of identity, for which a charge of 10 marks is made, and must pay a tax of 250 marks. The certificate is valid for one year; the tax is only valid for three months, so that the traveller must pay 250 marks for every three months he remains in the country. The Ordinance contains [illegible] to the effect that non-resident owners of peripatetic stores will be subject to a tax of 300 marks.

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The Advertising of Tenders.

A Bethlehem correspondent writes:—"The municipality of this dorp have finally [illegible] the advertising of tenders for the [illegible] contract to the local [illegible] to point out how [illegible] the best interests of the town. The Town Council [illegible] dians of the ratepayers' interests, and in such a capacity should endeavour to obtain the very best sanitary service in the country. This object cannot possibly be achieved by confining the advertising of tenders to [illegible] at the best, is only a very [illegible] South Africa. The inference is obvious, and it behoves the [illegible] to assert themselves and give the widest [illegible] to the advertisement in question."

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South African Hides and Branding.

A communication has been received by the High Commissioner for South Africa from the United Tanners' Federation of Great Britain and Ireland, [illegible] over [illegible] per cent. of the total tanning industry, calling attention to the effect of branding upon samples of leather tanned from hides coming from the Colonies. The Federation [illegible] damage which is caused [illegible] brought about by the branding [illegible] the farmers. This leather [illegible] 17d. to 18d. per lb. [illegible] it not branded, it would [illegible] per lb. Looking at the matter [illegible] [illegible] hides would fetch 1d. per lb. more [illegible]

from 60 to 80 lb., the difference in value may be easily calculated. It is further pointed out by the Federation that brands are nearly always placed upon the rump or the back of the cattle—the most valuable part of the leather—and it is suggested that they might be put upon the cheek, ears, or flank. This would be equally distinguishable, and would do from 5s. to 7s. per hide less damage to the beast, as the brands would then come on leather which in the open market is only worth from 7d. to 9d. per lb. In other words, the brand would come upon the thinner, and therefore less valuable part of the hide.

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South African Raisins.

The following communication has been received from the Raisin-Grading Committee:—For several years the Cape Agricultural Department has been trying to improve our raisin industry which is carried on in the south-western districts of the Province. It is a fact that our raisins have improved very much of late years, as was testified quite lately by Mr. Quinn, M.L.A., of Johannesburg, in an interview published in *The Star*. At the same time, it cannot be denied that our standard grade of raisin is not by any means all it ought to be, neither is it of the quality we can supply if a little more trouble is taken. We are certainly able to produce raisins which can complete with the best imported article. The question then arises, why do we not do so? To this many answers have been given, the most common being the conservatism of the producer, the lack of enterprise on the part of the South African merchant in helping to improve South African products, etc. As it is useless to blame either one or the other, we have come to the conclusion that we need the co-operation of all concerned. A Raisin-Grading Committee has been appointed to go into the matter, and has come to the conclusion that the only way to improve our raisin industry will be to follow the European method of having fixed grades, which will be recognised throughout South Africa. The system in vogue at present is that each individual firm fixes its own grades and sells under fancy names, as "Prize Raisins," etc. The difference in quality of different firms is sometimes very great indeed. The result is that when the merchants get quotations for "Prize Raisins" from different firms they very probably select the lowest quotation.

Tenders Accepted.

The following tenders were accepted by the Union Government for public buildings during the month of August amounting to £40,955:—Erection of new Nurses' Home at the Lunatic Asylum, Pietermaritzburg: Messrs. Jesse Smith & Son, Commercial Road, Pietermaritzburg. Erection of Dormitory at the School, Veekraal, Zoutpansberg: Mr. J. C. Van Rooyen, contractor, Pietersburg. Alterations to Public Works Department Stores Building, to accommodate the Registrar of Servants, Kimberley: Mr. W. C. Banham, Kimberley. Erection of Bridge over the Knysna River, Knysna Cape Province: Mr. I. Littlejohns, 1 Steyning Street, Woodstock, Cape Province. Erection of Bridge over the Impolweni Spruit, New Hanover, Pietermaritzburg: Mr. R. W. Holbrook, 3 Lily Road, Durban. Alterations to Post Office, Fordsburg: Messrs. R. Forbes & Co., Box 5188, Johannesburg. Additions to North School, Potchefstroom: Mr. G. F. Warren, Box 234, Potchefstroom. Erection of Teachers' Quarters, Villiers, Orange Free State: Mr. G. H. Minchin, Villiers, Orange Free State. Erection of Bridge over the Waterval River, near Pilgrim's Rest, Lydenburg: Mr. C. Polto, Box 594, Pretoria. Drainage and Sewage Purification Works at the Lunatic Asylum, Fort Beaufort, Cape Province: Mr. J. Ramsay, Box 995, Pretoria. Erection of School for 150 pupils, Krugersdorp West, Witwatersrand: Messrs. W. H. Miller & Son, Box 945, Pretoria. Structural Alterations for Lift Service at the General Post Office, Johannesburg; Messrs. Waters & Clarke, Box 4789, Johannesburg. Reconstruction of Karkloof River Bridge, Lions River Division, Pietermaritzburg: Mr. W. R. Holbrook, 3 Lily Road, Durban. Reconstruction of Shafton River Bridge, Lions River Division, Pietermaritzburg: Mr. R. W. Holbrook, 3 Lily Road, Durban. Erection of Bridge over Zontkloof River, Malmesbury, Cape Province: Mr. T. W. Perry, Savings Bank Buildings, Capetown. Alterations to School Building, Bellair, Durban: Mr. J. Alexander, 104 Eastwood Road, Berea, Durban. Additional Class-rooms at Primrose School Johannesburg: Messrs. R. Forbes & Co., Box 5188, Johannesburg. Additional Stables at the Experimental Farm, Potchefstroom: Messrs. J. Dunn & Co., Box 137, Krugersdorp. Erection of Boys' Hostel, Boshoff, Orange Free State: Mr. A. E. Parfitt, Whites Road, Bloemfontein. Erection of Bridge over the Buffalo River, near Belasgi, Kingwilliamstown: Mr. C. L. Schuddinh, Savings Bank Buildings, Capetown. Erection of School and Quarters, Goedgedacht, Heidelberg: Messrs. Patterson Bros., Box 2643, Johannesburg.

The following tenders for public buildings in the District of the Assistant Engineer, Public Works Department, Durban, were accepted:—Point Convict Station tank; contractors, Allanson & Sonner, Durban, £56 10s. Empangeni School veranda; contractor, J. Theunissen, Empangeni, £67. Harding School painting, etc.; contractor, E. Hook, Harding, £102 12s. 6d. Dipping tank, Alexandra Division; contractor, G. Hogg, Durban, £80. Addington School repairs; contractor, J. Hotner, Durban, £172. Empangeni Residency carriage house; contractor, J. Theunissen, Empangeni, £58. Eshowe School repairs; contractor, C. Fraser, Eshowe, £183 15s. 6d. Melmoth School storeroom; contractors, Ogden & Walsh, Eshowe, £61. Customs, Point, lean-to; contractor, F. G. Harper, Durban, £234. Frere Road School Kaffir-house; contractor, C. Karr, Durban, £69 12s. 6d. Glendale Police Camp repairs; contractor, W. Mohle, Darnall, £151 14s. 10d. Malvern School repairs; contractor, J. Anderson, Durban, £232 4s. Greenwood Park School repairs; contractor, J. Anderson, Durban, £122 5s.

Madagascar Graphite.

The *Dépêche Coloniale* (Paris) of August 24 states that for the last three years prospecting for graphite deposits has been carried out in earnest in Madagascar, principally on the high plateaus and at various points along the east and west coasts, viz., the districts of Antananarivo, Manjakandriana, Vatomandry, Maevatanana, Betafo, Antsirabe, Ambositra, Fianarantsoa, Fort-Carnot, and at Ambalavao in the south. Nearly 400 claims had been marked out up to July 1, 1912. At some places deposits of a thickness of some 60 to 100 ft. have been discovered which yield pure graphite varying from 3 ft. to 6½ ft. in thickness.

AUGUST GRADE, COSTS, AND PROFITS.

Analysis of the Gold Production for the Month

THE usual monthly analysis of the gold production for August issued by the Chamber of Mines is presented hereunder :—

THE WITWATERSRAND

	Total value recovered.	Value recovered per ton milled.		Total working cost per ton milled.		Total working costs.	Working profit.	Working profit per ton milled.	
	£	s.	d.	s.	d.	£	£	s.	d.
1. Aurora West United	18,261	24	4	18	11	14,212	4,1[illegible]8	5	6
2. Bantjes Consolidated	36,760	31	3	24	0	28,225	8,079	6	10
3. Brakpan Mines	93,144	32	6	18	3	51,821	40,382	14	2
4. Cinderella Cons.	22,823	26	4	25	10	22,405	339	0	5
5. City Deep ...	77,139	36	6	24	0	49,759	25,008	12	1
6. City and Suburban .	52,931	37	7	22	1	30,756	21,568	15	6
7. Cons. Langlaagte	31,786	28	8	21	2	21,660	10,126	9	11
8. Cons. Main Reef	33,311	28	5	19	8	22,670	10,102	8	9
9. Crown Mines	246,738	31	1	18	10	149,589	94,227	11	11
10. Durban Roodepoort ...	15,449	21	7	15	8	11,104	4,328	6	1
11. Durban Rood. Deep ...	41,369	31	11	24	0	30,856	9,896	7	8
12. East Rand Proprietary	254,783	32	2	21	2	162,489	90,450	11	9
13. Ferreira Deep	105,505	40	8	21	10	56,217	47,214	18	4
14. Geduld Proprietary ...	19,527	28	1	21	5	14,901	4,579	6	7
15. Geldenhuis Deep	71,086	28	6	26	10	66,102	4,073	1	8
16. Ginsberg	21,544	28	9	19	5	14,216	7,327	10	0
17. Glencairn Main Reef .	16,570	15	3	13	8	13,786	2,786	2	9
18. Jumpers-cum-Treasury	14,922	43	8	38	11	12,756	2,006	6	1
19. Jupiter	41,258	21	6	19	9	37,920	2,846	1	6
20. Knight Central	28,681	23	6	19	4	22,933	5,395	4	7
21. Knights Deep .	43,960	18	1	14	4	34,793	8,528	3	6
22. Lancaster West .	21,676	21	1	21	1	21,182	443	0	5
23. Langlaagte Estate .	64,166	21	0	17	6	47,043	16,510	6	2
24. Luipaardsvlei Estate ..	17,543	21	5	17	9	14,564	2,750	3	4
25. Main Reef West . ..	32,691	31	8	20	11	21,175	11,[illegible]10	[illegible]	1[illegible]
26. May Consolidated ...	17,760	22	9	15	0	11,697	6,02[illegible]	7	8
27. Meyer and Charlton ...	32,962	46	3	18	2	12,947	18,972	[illegible]	[illegible]
28. Modderfontein B. ...	66,672	38	4	17	2	29,901	35,958	20	9
29. New Goch	28,150	19	2	15	5	22,653	5,426	3	8
30. New Heriot	21,774	35	3	21	0	12,510	9,002	15	1
31. New Kleinfontein ...	73,388	29	4	19	8	49,397	23,292	9	3
32. New Modderfontein ...	92,507	46	1	21	7	42,996	48,442	24	4
33. New Primrose	36,594	29	3	14	6	17,519	19,073	15	1[illegible]
34. New Rietfontein	20,334	24	9	21	3	17,471	2,864	3	5
35. New Unified . .	17,025	29	8	21	2	11,978	5,048	8	11
36. Nourse Mines ...	86,858	30	2	20	6	58,122	27,567	9	9
37. Princess Estate .. .	26,892	27	1	25	9	25,545	1,283	1	4
38. Randfontein Central .	265,585	25	3	17	7	181,483	80,992	7	10
39. Robinson	102,498	39	1	14	10	38,068	60,946	23	10
40. Robinson Deep	74,169	32	0	19	3	44,318	32,510	14	2
41. Roodepoort United	[illegible]24[illegible]	2[illegible]	[illegible]	[illegible]	[illegible]	27,[illegible]	[illegible]23	2	[illegible]
42. Rose Deep	[illegible],115	2[illegible]	[illegible]	[illegible]	4	25,2[illegible]	[illegible]71	[illegible]	2
43. Simmer and Jack	[illegible]2[illegible]5	22	[illegible]	[illegible]	3	42,3[illegible]	2[illegible]27	11	[illegible]
44. Simmer East	27,[illegible]	1[illegible]	11	17	3	25,[illegible]6	2[illegible]47	1	0
45. Simmer Deep	45,1[illegible]	[illegible]	1	15	[illegible]	42,2[illegible]	2,2[illegible]	[illegible]	1[illegible]
46. Spes Bona Tributors	6,[illegible]73	21	7	—		—	—	—	
47. Van Ryn	[illegible],460	27	1	14	1	28,354	24,[illegible]	11	11
48. Village Deep	[illegible]35	[illegible]	9	2[illegible]	5	51,732	25,32[illegible]	1[illegible]	[illegible]
49. Village Main Reef	[illegible],7[illegible]7	[illegible]	5	17	[illegible]	36,[illegible]25	[illegible],433	22	[illegible]
50. Vogelstruis Estate	12,[illegible]1	2[illegible]	[illegible]	1[illegible]	5	1[illegible]56	1,254	2	3
51. West Rand Central	3,7[illegible]7	33	2	30	4	3,3[illegible]6	443	4	[illegible]
52. West Rand Cons.	39,7[illegible]4	29	2	23	4	31,7[illegible]	[illegible]11	5	1[illegible]
53. Witwatersrand	45,[illegible]18	22	1[illegible]	13	7	27,375	1[illegible],543	[illegible]	3
54. Wit. Deep	54,222	2[illegible]	1	19	[illegible]	35,[illegible]23	17,477	[illegible]	7
55. Wolhuter	37,3[illegible]4	27	1	18	5	25,22[illegible]	14,[illegible]20	1[illegible]	2
Miscellaneous producers	19,512	—		—		—	—		
Witwatersrand totals	3,11[illegible],176	28	[illegible]	1[illegible]	1[illegible]	19[illegible]54[illegible]7	1[illegible]55315	1[illegible]	[illegible]
				54 cos.		54 cos.	54 cos.	54 cos.	

The apparent small disagreement between working costs and profits per ton milled and value per ton is due to inclusion of value won from accumulations and by products.

OUTSIDE DISTRICTS.

	Total value recovered.	Value recovered per ton milled.		Total working cost per ton milled.		Total working costs.	Working profit.	Working profit per ton milled.	
HEIDELBERG—									
1. Nigel	18,669	29	[illegible]	24	3	14,929	3,532	5	[illegible]
2. Sub Nigel	9,821	41	1	2[illegible]	[illegible]	6,[illegible]26	2,155	[illegible]	[illegible]
BARBERTON—									
3. Barrett	1,[illegible]	7	[illegible]					—	
4. Sheba (Rose ...)	13,5[illegible]	4[illegible]	[illegible]	[illegible]	[illegible]	[illegible].65[illegible]	4,[illegible]70	17	3
5. Worcester	5,14[illegible]	22	10			—			
LYDENBURG—									
6. Glynn's Lydenburg	7,527	40	1	20	1[illegible]	3,415	3,54[illegible]	21	8
7. Transvaal G.M. Estates	41,347	53	6	21	[illegible]	16,518	23,740	31	3
Miscellaneous producers	40,9[illegible]7			—		—	—	—	
Total (outside districts)	13[illegible],219	39	7	24	0	5[illegible],468	3[illegible],843	18	5
				5 cos.		5 cos.	5 cos.	5 cos.	
Grand totals	3,248,395	29	[illegible]	19	[illegible]	2,[illegible]45955	1[illegible]93158	1[illegible]	2
				59 cos.		59 cos.	59 cos.	59 cos.	

Congo Diamonds. Whether the Congo Free State will in time become a prolific producer of diamonds as well as of copper and, in all probability, of gold, is for the present highly problematical. There is, however, no question as to diamonds having been found scattered over a very wide stretch of this vast and, as yet, almost unprospected territory. It may be recalled that some little time ago a company was floated to work certain diamond-bearing deposits found in the Kundelungu area of the Southern Congo. There has of late been a marked paucity of news from these fields, but there appears to be no doubt that large numbers of small stones have been picked up in another district—in the Kasai region. The basin of the Kasai lies in the south western portion of the Congo Free State, and in proximity to the Portuguese border. It is now announced that large discoveries have been made there. According to advices received in London, the diamonds found in the Kasai region "are not so valuable as the Kimberley stones, but are equal to those from German South-west Africa." It is reported that [illegible]600 stones have been picked up in the region, the greater proportion having been discovered in the tributaries of the Kasai River.

Johannesburg Motor Garages and Suppliers of Motor Cars, Accessories, etc.

Automobile Notes.

Motor Legislation.

The much discussed Motor Bill, to be introduced at the next session of Parliament, it is hoped, will, in time, solve some of the difficult problems with which the motorist is faced in South Africa. Legislation, in regard to the motor, may be considered merely in its infancy, and so far has certainly effected very little for those whom it is designed to assist. That reform is needed at the present time goes without saying; the day, however, is rapidly approaching when it will be insisted upon for the common good. The controversy, engaging a measure of attention, as to which body may eventually be credited for the introduction of modern motor legislation to this country, is a wasted and idle endeavour, and of little interest to the motorist community, in that it does not in any way materially affect the position. The motorist to-day is hedged in by far too many senseless restrictions, while particular care is observed that the few privileges he *may* enjoy are specially paid for. In the matter of taxation, for example, why should the proportion with which the motorist is mulcted be so glaringly inequitable, when comparisons are made with other vehicles, the destructiveness of which, in point of the road, is far greater than in the case of the automobile? Equally farcical is the present system of speed limits, and their abolishment will constitute by no means the least of the many desirable reforms, while the trapping methods instituted to enforce a recognition of the speed anachronism is absurd in the extreme, and finds but little favour, even from the magisterial bench. Legislation of a proper kind can serve, in a great measure, to remedy many of the present-day motorist grievances, and in so doing tend to popularise motoring, and remove from those identified with the pursuit much of the unwarranted prejudice which exists.

T.A.C. Hill Climbs.

The following information is extracted from the rules and conditions governing the Club Annual Hill-climbing Competition, on the 29th inst., and which is being held on the Mulder's Drift Hill, as mentioned last week. All competing cars will proceed to the municipal weighbridge, Market Square, between the hours of 9 and 11, on the morning of the 29th inst. Competitors must, before weighing, decide what actual weight they purpose carrying in the competition, and have their machines weighed accordingly. After weighing, competitors will proceed to Mulder's Drift, and be lined up at the starting point, when lots will be drawn to decide the order of procedure in starting. The competition is open to club members exclusively, but cars may be driven by any person nominated by the entrant. The deciding formula for horse-power is the Dendy-Marshall, an approved method used by the T.A.C. for some considerable time in competitions. Entries closed on the 26th inst., and no post entries are considered. A minimum of seven entries will be required to constitute holding of the competition. First and second prizes are offered, and also a prize for fastest time performed. The competition will be a "standing start" and "flying finish." The club have made arrangements for a luncheon to be served, at a nominal charge, at the Mulder's Drift Hotel, for members and their friends, of whom a large muster is expected, should weather conditions prove propitious.

The Tyre Question.

The South African market is being supplemented by many new types of tyre product, with varying claims to recommendation, and with such regularity are these additions forthcoming, that one inclines to the opinion that the field in this particular motor equipment is at present in danger of being overdone. The S.A.S.M.T. are keenly aware of the position which the dumping of so many varieties of tyres has brought about, and the Society are using their influence in turn to protect the motoring public from the inroads of tyre products, other than the genuine article. In point of the purchaser, the matter of selection, it will be admitted, has therefore become more or less of a fine art.

and recognising how largely the tyre enters into the maintenance of motoring in South Africa, it is hoped that the motorist, in view of the bewildering variety of types marketed, will not be frustrated in the quest for the tyre affording the greatest wear resistance facilities, the obvious, and only, qualification worth consideration. The standard quality of the production of several manufacturers, whose tyres are in use throughout South Africa, is being consistently maintained, and as several firms—quoting at random—such as the Continental and Dunlop, specialise in Colonial tyre equipment, it seems inconceivable why a departure from well-known and approved lines, to meet the peculiar road conditions, can be entertained by the South African motoring public. It may here be mentioned that the policy of fitting the smallest tyre which the car may reasonably travel on, in order to cut down first cost, is to be discouraged, and the advice of manufacturers, who are probably in the best position to judge, be respected; not that the suggestion is engineered with a view to large profits accruing to the makers, but on the score of affording the maximum of satisfaction, which can never be derived from cars under-tyred. A variety of causes, however, contribute to excessive tyre wear, one frequent source being the lack of wheel alignment, a matter which every owner should ensure against. The abuse of tyres is another phase of this vexed question, which much could be written about; suffice it to say that the usage cars may receive from careless and incompetent drivers reflects in many instances most unfairly on the tyres, and abundant proof of this is evidenced when one considers the great strain consequent to sudden application of brakes, or clutch engagement with the engine running fast—practices which the best constructed tyres are incapable of withstanding.

Here and There.

The 20 h.p. Vauxhall which won first place, and made fastest time, in the T.A.C. Hill Climbs of 1910 and 1911, is again favourite in the coming similar competition. The marked success of the Vauxhall on South African hills is not achieved by any attendant undue strain on any particular part; rather, it may be remarked, is every part of the Vauxhall mechanism designed with a strength far in excess of that which the steepest hill in the country can subject it to.

* * * *

The sidecar is becoming daily more popular in Johannesburg, largely owing to the many excellent road surfaces suited to its use. To the man of moderate means, to whom the question of initial car outlay is serious, the cycle and sidecar appeal, in that, apart from the purchase price, the tax, cost of running, and general upkeep bear slight comparison with the car. With the advent of the light four-wheeled cycle car, however, it is quite probable that the prestige which attaches to it may induce many to favour this useful and extremely moderate-priced machine.

* * * *

It would appear that, were a more considerate attitude adopted by the motorist towards other road traffic in Johannesburg, and particularly in regard to that of a slowly...

moving nature, the dislike with which motor drivers, as a class, are characterised would appreciably lessen. This absence of due consideration, which has come to be regarded as an inherent failing in the motorist ranks, is unfortunate, but can be remedied by a little attention to seemingly minor details, which the claims of common road courtesy clearly demand.

* * * *

The everyday breaches of street regulations which motorists are guilty of may be described as legion, and the contributory negligence which some of these involve lacks serious recognition. The motorist, for example, who fails to signal his intention to deviate from a certain course is a frequent source of street danger, and is reprehensible, second only to his more errant and callous confrere who hastens from the scene of his depredations, without attempt even at investigation.

* * * *

Many shock-absorbing devices, it will be noticed, are being fitted on cars locally, which are, in the main, most effective in use, especially when much travelling in the districts has to be performed. Several firms specialise in these devices, which are manufactured to suit various weights of cars. So confident are some makers of the shock-absorbing facilities afforded in their products that they fit them free of charge, on extended trials, and remove them, similarly, if unsatisfactory on the machine so fitted.

* * * *

Reference was made last week to the disadvantages of the self-starting mechanism, as seen from Mr. Edge's standpoint. The manufacturers of the "Star" car, however, are emphatic in their approval of the self-starter as supplied on their machines, and point out the simplicity of this ingenious device, operated simply by a foot-pedal, there being no limit to the number of times it may be used, as the engine automatically re-winds the starter.

* * * *

The shops in proximity to the new garage being erected at the corner of Loveday and Marshall Streets, are rapidly approaching completion, and among the occupiers-to-be figures the Johannesburg Vulcanising Works, whose re-treading work is so well known for excellence. Up-to-date machinery will be laid down in the new premises for the important work of re-treading, and as each tyre will be examined by an expert as to the condition of lining, etc., the fact of acceptance will ensure for the customer the firm's guarantee of satisfaction.

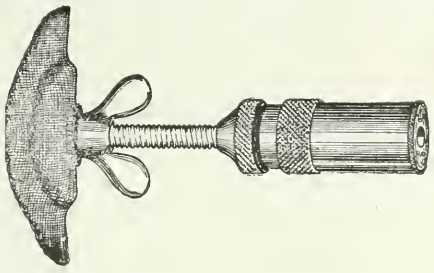
* * * *

The "Austin" Advocate, a neat booklet published in the interests of the manufacturers of the car of that name, improves with every issue, and serves not merely the purpose of an advertisement for this excellent machine, but

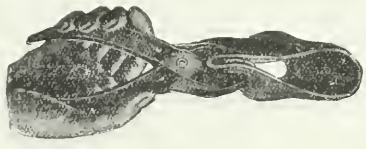
contains a lot of useful and interesting current information to motorists, irrespective of what class of car they may favour.

Parsons' Non-skid Chains.

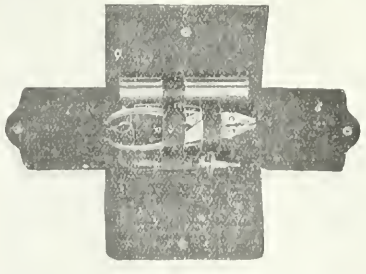
Some little time ago we drew attention to this device, and the facilities afforded to motorists by the use of these chains, having respect to the adverse conditions which influence, to a great extent, the pursuit of motoring in South Africa. It is therefore with pleasure a further reference is made to this famous non-skid, which is at once the most reliable, convenient and cheapest device yet produced.



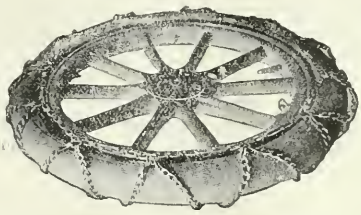
With a pardonable pride the manufacturers review the eight years these chains have been in service in all parts of the world, under all conceivable conditions of road surface, holding their own with an enviable and ever-increasing popularity, which, briefly, is attributable to the utmost simplicity embodied in the attachment, combined with the effective nature of results obtainable. The well-known Parsons' non-skid with wire side hoops and zig-zag cross chains was one of the earliest attempts to preserve motorists from the serious danger of side slip. It was introduced



at a time when there were few other devices in existence, and was well received, notwithstanding other devices claiming to protect tyres from punctures, in addition to preventing skidding. Since the time of introduction these chains have experienced a steadily growing favour among motorists,



which is evident by the sixty thousand the Home trade alone has absorbed of this product. The principal feature of the improved type is the substitution of chain for wire in the side hoops. After careful experiment it is accredited that the chain can be absolutely relied upon for strength, and has the advantage over wire in this respect. Chain hoops have made the non-skids much easier to put on, and also overcomes the difficulty in regard to fitting, it being easy to shorten the chains, for instance, should the device be a little too large. The chains, it may be remarked, are sent out *when new* a little too long to meet the case of retreated or extra size tyres, an obviously wise precaution. The non-skids can be fitted into a very small space when travelling. The simple instructions for fitting are contained in the neat little pamphlet issued by the patentees, and which accompanies every purchase. The manufacturers, with the utmost confidence, recommend this speciality chain for use in South Africa, and predict for it a similar



popularity to that which has characterised its introduction to many other countries, once the immense facilities in the prevention of skidding, and sticking in soft ground, it affords, become suitably recognised. The indifferent nature of the roadways of the country certainly renders the use of such a device little short of indispensable. Space at our disposal will not permit detailed description of other specialities marketed by the Parsons' Non-skid Co., Ltd. Their Rapid Repair Kit is already " a household word " in the motor world, in that it has provided the newest and by far the most effective means of making an instantaneous repair in the punctured tube of a motor tyre, with a minimum of delay.

The Week's Company Meetings.

TRANSVAAL G. M. ESTATES.

Steady Progress.

Increased Profits.

Improved Development.

Power Supply.

The fifteenth annual ordinary general meeting of the shareholders of the Transvaal Gold Mining Estates, Ltd., was held in the Board Room at the Corner House on September 20. There were present Messrs. H. C. Boyd (chairman), H. Eckstein, S. Evans, J. H. Ryan, C. Meintjes, E. A. Wallers, M. Dold, S. Zwarenstein, G. Hesse, J. E. Allingham, S. W. George, S. M. Nelson, F. Boerecker, J. W. Selke, F. W. Baxter, S. Shiers, H. Daniel, B. T. Bourke, C. E. de Beer, W. J. Endean, and the secretary, Mr. W. Russell Slack, the total representation being 104,944 out of a total issued capital of 604,225 shares.

Chairman's Speech.

The Chairman said: The reports and accounts which are now submitted for your approval cover the period of twelve months ended 31st March, 1912. They are presented in a somewhat different, and, it is hoped, improved form, and are so full that no elaborate review of them is necessary, especially after the very clear statement, which I presume you have all read, submitted by the Chairman of the recent London meeting to the shareholders there. I shall rather endeavour to inform you as fully as possible of the progress of the company during the current year. I dealt fully at the last annual meeting with the reasons which rendered it necessary to temporarily reduce the monthly profits, through the increased working of Clewer ore. As you have seen, the results of the latter half of the past financial year were thereby adversely affected, but in the final result, the year's profit of £205,103 19s. 3d. compared favourably with that of the previous financial year, showing as it did an increase of several hundred pounds. Out of this profit, the profits tax of £18,582 10s. 2d. was met and two dividends of 15 and 12½ per cent. respectively were paid absorbing £166,161 17s. 6d., leaving, with the balance brought forward from the previous year, undistributed profit of £80,666 13s. 1d., which is represented by cash and cash assets, after deducting liabilities: the actual cash amounting to £46,534. There also remained at the close of the year £26,638 9s. 5d. of the proceeds of the debenture issue, of which, however, the greater part had already been ear-marked for sundry further capital expenditure to which I shall refer later. During the year, expenditure on that account amounted to £43,393 5s. 8d., the major portion of which was spent on the completion of the Belvedere Power Station, and on the extension of the machinery and plant at the Central Mines, as fully set forth in the general manager's report. It may be worth while to draw your attention here to the fact that the company would not be in its present prosperous state had the power station not been erected. Not only would the present scale of operations have been impossible, but owing to the decrease of rainfall in recent years, we could not have hoped to maintain last year's results. Property account was also increased, owing to the acquisition of a mynpacht on Elandsdrift and of certain claims as mentioned in the directors' report. Despite the continued scarcity of native labour a large amount of development was accomplished at the Central Mines with the satisfactory result that the tonnage of the ore reserves at the close of the year remained practically the same as at the end of the previous twelve months, in spite of the fact that we crushed nearly 20,000 tons more; and there was a slight increase in the average value per ton.

Work in Progress.

At the last annual meeting I indicated the important work which was in progress in Duke's Hill, Columbia Hill and Peach Tree. The general manager's report details the progress of this work, the outstanding features of which were the completion of the connection between Columbia Hill and Peach Tree—so that all this large area is now embraced in the Peach Tree Mine—and the favourable development in the Duke's Hill channel. Development during the current financial year in the Central Mines has increased the total tonnage and the average value of the ore reserves, and has placed us in a position to add materially to these reserves in a comparatively short time, if present indications are maintained. The special feature is the development round the Duke's Hill Channel. As was stated in the last quarterly report, connection was satisfactorily effected with Duke's Hill South, and development is being rapidly pushed here, where it may be said that already we have considerably more than replaced the decreased tonnage in the Clewer, but with ore of much better value. A drive is now being carried forward to meet one from the Peach Tree Mine, a distance of some 1,500 feet. The disclosures from this drive will have a most important bearing on the prospects of the company.

Prospects of Duke's Hill.

Naturally at this stage nothing is known of this intervening ground, but the values in Duke's Hill are generally highly payable; the drive will run on the strike of the reef, and there is clearly a possibility of opening up a large amount of reef-bearing ground on the dip. At the point from which the connecting drive from Peach Tree has started an excellent body of reef has lately been disclosed above the incline shaft—referred to in the general manager's report—which is being sunk to open the large area on the dip of the reef. In that mine the Beta dyke, mentioned by Mr. Aimetti in his report, has been passed through at several points, and encouraging values are being disclosed in the ground beyond. The general development in the other Central Mines during the period has been satisfactory. It is gratifying to see that the Theta, after so many years, is not only holding its own, but yielding further disclosures, as reported by the general manager, which continue to open up well. In the Clewer all the payable ore that we have been able to find will be comfortably worked out before the expiry of the Morgenzon Concession in May, 1913. As mentioned in the last quarterly report, the ore remaining to be mined in the Clewer is of higher grade than the average which we had to mill from there last year, but, in spite of this improved value, when the [illegible] automatically replaced for the battery by ore of twice the value from the Duke's Hill Mine, on which as yet no [illegible] has been done. The outside prospecting operations of the past year call for no special comment. At present prospecting is proceeding on five farms, on one of which the results are encouraging, and work is contemplated on a sixth. The past year at Elandsdrift was a most successful one, the profits showing an increase of £[illegible], and the ore reserves being materially added to. At Vaalbeek the working profits were more than doubled, but on the other hand, the ore reserves were slightly decreased.

Current Year's Results.

In the current year's results there is nothing but what is pleasant to record. The total profit to the end of last month amounted to £106,583, or a monthly average of £21,316, compared with an average of £17,092 for last year. The costs at the Central works are appreciably below those of last year, and the amount of ore treated has steadily increased. A most satisfactory point is that, while for the first month or two we were treating ore somewhat above the average value of the reserves, this is no longer the case. The extensions to the plant of the Central Mines are now virtually completed, with the exception of the new crusher station, and we were therefore able to mill last month 13,050 tons, the maximum estimated capacity of the plant; and while treating ore below the average value of the reserves were able to show the very satisfactory profit of £23,0[illegible]. Included in this is profit from treatment of the Clewer accumulated slimes, about 50 tons of which will now be treated daily and form an appreciable addition to our profits. The milling of so comparatively low grade ore was, of course, not intentional. When the new crusher station is completed we shall be able to keep much better track of the ore from each mine, and, consequently, will have better information regarding the grade coming from each section. At Vaalbeek, the satisfactory profit of £[illegible] was made last month. [illegible] it is hardly anticipated that this rate can be maintained, we can reasonably expect better results this year at this mine. Though there is nothing definite to report as to an improvement in development, the management are hopeful that the work now in hand will improve the position. At Elandsdrift, the development in the blow, or quarry, continues as satisfactory as ever. It is estimated that, with the ore now in sight alone, the present excellent profits could be maintained for two years. The erection of the power station is proceeding satisfactorily and all the work should be completed in a couple of months. Development in the top section will [illegible] be pushed ahead as with [illegible] to prove the extent of the blow. Everything points to the fact that the company's profit for this month will be at least as good as that of last month. We [illegible] therefore estimate that the net profit for the current half year will amount to about £111,000, that is, after providing the necessary amount for the Profits Tax and half of the sum which must be devoted during the year to redemption of the debentures. You will recollect that these have now to be redeemed at the rate of £[illegible] [illegible]. The Board has therefore to-day declared a dividend of 17½ per cent. for the half year, which will absorb £105,779.

Extension of the Plant.

The position as regards expenditure on capital account is that all the proceeds of the debenture issue have been expended or allocated to capital votes, and an additional sum of £7,400 will be applied to the same purpose. The important items on which this outlay has been or will be incurred this year are the extension of the cyanide plant (now completed) and the crusher station at the central works, compressor plant at Peach Tree Mine—which, I am glad to say, is working most satisfactorily—electrification of the Jubilee tramline (now running) and the construction of the tram-line to Duke's Hill, in preparation for our starting stoping there. The erection of the power station at Elandsdrift, and the electrification of the plant there is also provided for. We are also arranging to supply water and electric light to Pilgrim's Rest township. This is being done more through a desire to improve living conditions there than as a profitable undertaking, but at the same time rates have been so fixed as to yield a reasonable rate of interest on the outlay and to provide for its redemption. Lastly, we have recently purchased the remaining half of the farm "London" on satisfactory terms. As you are aware, we have owned this farm jointly with another for a considerable time. These commitments, which are covered by the above-mentioned outlay, embrace all capital expenditure that can at present be foreseen, with the exception of a small amount for tree planting annually, and will complete the programme of extension which was foretold last year.

Tree Planting.

At the recent meeting of shareholders in London, there was some discussion about tree planting. Though I think our reports have made the position quite plain, I will repeat that in the neighbourhood of the central mines we planted a considerable area with eucalyptus trees some years ago. No extension of these plantations is contemplated. We are already drawing supplies of mining timber from them, and we have just arranged to increase our supplies from there as the plantations are now ripe for this. Considerable economy will result from this owing to the heavy prices we have hitherto had to pay for bush timber. The growing of these trees has, economically, been more than justified, and the timber is quite satisfactory for our purposes. At Elandsdrift, some years ago, we planted a number of wattles for mining timber. These will shortly be of great value to us for this purpose. In addition, we are gradually planting from 2,000 to 3,000 acres on that farm with wattles for the purpose of producing bark, which commands a high price for tanning purposes. The total expenditure on this latter plantations, as is shown in the accounts now before you, had amounted, at the close of last year, to £2,230, and we propose to spend about £1,000 a year for the next few years on the extension of these plantations. We are perfectly satisfied that this expenditure is fully justified.

Improved Efficiency.

The General Manager, in his report, emphasises the importance of obtaining an adequate supply of unskilled labour, and draws attention to the great efforts which have been made to improve the supply. It is most interesting and encouraging to be able to report that while the extended operations of the past financial year, both as regards milling and development, were achieved with an increase of only four per cent. in the supply over that of the previous year, the still further extension of development and production this year has been accomplished with virtually no further increase in the number of native labourers. That indicates an improved efficiency, which reflects great credit on the management. Recently, very satisfactory arrangements have been made for the control and organisation of our unskilled labour force, and Mr. Aimetti reports that he has sufficient labour for his purposes and that he does not anticipate any difficulty in maintaining this position. This being so, there appears to be every reason to anticipate that the recent excellent profits will be maintained, especially as the position as regards development is to-day more satisfactory than it has ever been before.

Our thanks are due to Mr. Aimetti, our general manager, and to those under him, whose efforts have, in no small measure, contributed to the present position of the company. During the past year many improvements have been effected in the general administration of its affairs, the effects of which are apparent in the results which we see to-day. I now beg to move the adoption of the report and accounts for the twelve months ended the 31st of March, 1912.

The report and accounts were unanimously adopted.

The appointment of Mr. J. H. Ryan as a director in place of Sir Abe Bailey, resigned, was confirmed.

Messrs. S. Evans and J. H. Ryan were re-elected directors, and Messrs. Howard Pim and Charles Stuart were reappointed auditors.

SWAZILAND TIN, LIMITED.

New Working System.

Highly Satisfactory Prospects.

The seventh annual meeting of shareholders of Swaziland Tin, Ltd., was held on Sept. 20 in the board-room, Corner House. Mr. H. C. Boyd presided, and there were also present Messrs. H. Eckstein, F. H. Barry, H. J. McCormick, S. W. George, C. J. O'Rorke, F. S. Miller, J. F. Fergusson and F. Boerckel, representing 55,965 shares out of an issue of 82,000.

The Chairman, in moving the report and accounts, said:

The reports and accounts for the year ended the 30th of June, 1912, are now submitted for your approval. The year's working profit is shown in the accounts as £8,710 1s., but, as is stated in the report, the unrealised shipments were estimated for safety's sake at £180 per ton of metallic tin. As you are doubtless aware, the price of tin has recently ruled at a much higher level, and since the close of the financial year two of the last four shipments of that period have been realised and have yielded £750 more than the amount for which credit had been taken. Further £1,400 will be received if the remaining two shipments, which should be just arriving, realise present high prices. It is likely then that the actual working profit for last year will prove to be about £2,000 more than the amount shown in these accounts. From the above estimated profit, £8,200 were distributed in dividends, the base metal royalty was paid, and £192 were transferred to meet outlay on capital account, the working capital having been exhausted during the year owing to the expenditure, which is detailed in the directors' report, the bulk of which was for the water races from the 'Mbuluzi River and the new hydraulicing plant. During the past year the whole system of working the larger creeks has been revolutionised, and thoroughly modern methods have been introduced under highly qualified technical advice. As Mr. J. J. Garrard, who has been appointed consulting engineer to the company, points out in his report, the effect has been that we have been enabled to work certain ground at a profit which would have been impossible with the old methods, and as the acting manager records, we have reduced the amount of unskilled labour by one-half, the amount of ground handled per boy having been greatly increased. Had the reasonable expectations we had formed of the amount of water available from the M'buluzi River been fulfilled, we should have had a most prosperous year. When the flow of the river was ganged, preparatory to entering into this system of working, it was found that an ample supply was available and this in spite of the fact that, according to those who had known the river for many years, it was then lower than it had ever been before. Unfortunately, owing to the exceptionally dry weather during the past two or three years, the flow has steadily decreased and is to-day only a quarter of what it was when ganged. In spite of this shortage, as you see from the monthly returns, there was a steady improvement in output during the latter half of the year, an improvement which would undoubtedly have continued had the water supply not fallen off. Even as things are, we recovered just under 24 tons of concentrates last month

Meeting the Decrease.

Mr. Garrard fully explains what it is proposed to do to meet this decrease in the water. As you see, the elevators consume 60 per cent. of the supply available under head, and consequently the amount available for cutting ground is proportionately reduced. Orders have now been placed for a hydro-electric generating plant, which will operate three gravel elevators on two of the larger deposits. The cost will be about £6,000, which will have to be borrowed, as so much cash is always locked up in unrealised tin in transit. Owing to the amount of high pressure water which will then be released for the operating of the monitors, as Mr. Garrard states in his report, taking tin at our usual conservative figure, there should, after this expenditure has been incurred, be an increased monthly profit of between £2,000 and £3,000. There is no doubt that payable tin exists on our property in large quantities, and it is only a question of extracting it at a sufficiently rapid rate. Much has been done during the year to prove the value and extent of the deposits, but it will be some time, owing to the amount of drilling to be done over so large an area, before we have reliable figures regarding the amount of profitable ground remaining to be worked. Generally, it may be said, however, that the recent disclosures in this respect are highly satisfactory. Our share of expenditure, less realisation in the Zaaiplaats lease, has been written off. At the moment, the prospects of disclosing further bodies of payable ore are not bright, but the position changes from day to day in these deposits. The ore now at grass on the lease will shortly be treated at the Groenfontein plant, and our share of the proceeds will be sufficient to repay the balance written off last year, and our share of current expenditure.

The report and accounts were adopted.

Messrs. E. A. Wallers and C. Distel, retiring directors, were re-elected, and Messrs. Alex. Aiken and Carter were re-appointed auditors.

CENTRAL RAND FREEHOLD

Annual Meeting.

The annual general meeting of shareholders of the Central Rand Freehold Proprietary, Ltd., was held in the board-room, Corner House, yesterday afternoon. Mr. H. C. Boyd presided, and there were also present Messrs. W. H. Dawe, W. S. Smits, H. Eckstein, F. Leslie Brown, E. H. Saffrey, C. L. Read and the secretary, Mr. W. E. S. Lewis.

On the motion of the Chairman the report and accounts were adopted.

Messrs. E. A. Wallers and F. D. P. Chaplin, retiring directors, were re-elected, and Messrs. Alexander Aiken and Carter and Mr. Charles Stuart were reappointed auditors.

RIETFONTEIN (T.C.L.), LTD.

Satisfactory Outlook.

Mr. H. C. Boyd presided at the annual meeting of shareholders of the Rietfontein (T.C.L.), Ltd., held in the boardroom, Corner House, yesterday afternoon.

The Chairman, in moving the adoption of the report and accounts, said: The reports and accounts now before you fully set forth the position of the company up to the 30th of June, 1912, just prior, that is, to the starting of milling operations. As you see, we entered on the current year with a liability of £6,150, being the amount drawn of the loan of £7,000 from the Transvaal Consolidated Land and Exploration Company, and to meet current expenses we have had to borrow further £1,500 from that company. The mill started its trial run on the 3rd of July. The usual troubles incidental to starting up a new plant were met with, and minor alterations had to be made before continuous running could be achieved. Till the end of August the running time was intermittent, and owing to the usual absorption of gold in a new plant and the fact that great difficulty was experienced in obtaining amalgamation on the plate, no clean up was made for July. The plate trouble was eventually overcome, and the first clean up was made on the 26th of August. To that date the mill ran 34.7 days, crushing 1,112 tons, or 32 tons per day. The gold called for from the screen sampling was 439 ounces, that is 7.89 dwts per ton, a quantity of the ore milled being from development dumps. Of this gold 233.13 ounces, or £900, were actually recovered in the clean up, the rest being absorbed in the plant. The theoretical extraction for the two months has been satisfactorily namely, 85 per cent., or practically the same as that which was indicated by the laboratory tests.

FINANCIAL SIDE.

Owing to the irregular running of the plant, it is impossible, as yet, to give reliable working costs per ton, but the expenditure amounted, for July, to £850, and £1,048 was spent during August so that the result of the first two months' work is a loss of about £918. The plant is now running much more regularly, and when I was at the mine last week they were crushing over 50 tons a day, and the screen values were averaging from 13 to 14 dwts. If these conditions can be maintained a satisfactory profit may be expected for this month. No development is being done at present, the idea being to exploit the ore in the oxidised zone as economically as possible. As soon as the financial position warrants it development will be resumed. As you see, we had ore reserves of 10,752 tons of an average value of 13.7 dwt. over 36 inches when we started milling. I may mention that there was unexpected delay in completing the plant and starting operations, and, consequently, greater expenditure than was anticipated, owing to the regrettable illness of Mr. Damant, the manager, who until he became ill, had given great attention to the company's affairs. I am glad to say that Mr. Damant has now returned, and is devoting much attention to the mine and plant.

The report and accounts were adopted.

The retiring directors, Messrs. H. C. Boyd, W. H. Dawe, and E. A. Wallers, were re-elected. The reappointment of Messrs. Aiken and Carter as auditors was also agreed to.

FAIRVIEW (T.C.L.), LTD.

The [illegible] Fairview (T.C.L.), Ltd., [illegible] afternoon, [illegible] House.

Mr. H. C. Boyd [illegible] the adoption of the [illegible] said: [illegible] mitted [illegible] the company [illegible] engineer's [illegible] clearly set forth [illegible] as regards [illegible] prospects [illegible] being 2,718 tons [illegible] value of 12 [illegible] evident that [illegible] covering [illegible] what may be [illegible] greater [illegible] rendered. No development [illegible] at present, the mine being ready to [illegible] the mill, which it is expected will start running next month. The plant, which [illegible] fully described by Mr. Garnett, will have a capacity of 60 tons per day. As you see, it is believed that the [illegible] ture on equipment will [illegible] £9,[illegible] of which £3,618 had been spent up to the end of June when we had £7,[illegible] in hand in cash and cash assets. At the end of last month our net [illegible] £3,075 18s. 1d., of which £2,525 will be required for construction. Owing to [illegible] working expenses, until the first gold is banked, the balance of cash will probably be expended, and a small deficit will have to be met out of the [illegible].

The report and accounts were adopted.

Messrs. H. C. Boyd, E. A. Wallers, H. Eckstein and Julius Jeppe were re-elected directors, and Mr. J. L. Ramsay was added to the board in place of Mr. P[illegible] resigned.

Messrs. Aiken and Carter were reappointed auditors.

New Companies.

REGISTERED DURING AUGUST 1912.

John N. Sellar & Co., Ltd., 54-56 National Bank Buildings, Simmonds Street, Johannesburg; capital, £5,000. Registered, August 1st.

The Amalgamated Window Agency, Ltd., 5 Charlton Chambers, Harrison Street, Johannesburg; capital, £200. Registered, August 2nd.

S.A. Amalgamated Jewish Press, Ltd., 6, Primrose Buildings, Fraser Street, Johannesburg; capital, £2,000. Registered, August 8th.

Wybert Frederick, Ltd., 7, Transvaal Bank Buildings, Fox Street, Johannesburg; capital, £1,600. Registered, August 12th.

The Premier Timber Co., Ltd., Bell's Buildings, corner of Main and Harrison Streets, Johannesburg; capital £3,000. Registered, August 23rd.

The Palladium Theatres, Ltd., 11 and 12, Steytler's Buildings, corner of Market Square and Loveday Street, Johannesburg; capital, £10,000. Registered, August 23rd.

Britsdale Diamond Syndicate, Ltd., 3, General Mining Buildings, Main Street, Johannesburg; capital, £3,000. Registered, August 28th.

INCREASE AND DECREASE OF CAPITAL.

Golden Hill Pongola Gold Mining Syndicate, Ltd., Johannesburg; increased from £8,000 to £10,000; August 23rd.

Engineering Supplies, Ltd., Johannesburg; decreased from £32,000 to £30,000; August 23rd.

Foreign Companies Registered.

4041. The Ulundi Gold Mining Co., Ltd., c/o Stewart Edington, Barberton; capital £110,000.

4043. Rudge-Whitworth (South Africa), Ltd., c/o Sidney Harry Adams, 45, Pritchard Street, Johannesburg; capital £5,000.

4044. Pilgrims Mining Estate and Exploration Co., Ltd., c/o Charles Henry Dawes, 53, Tudor Chambers, Pretoria; £250,000.

4045. Samuel Osborn and Co., Ltd., William Raeburn Snow, Hartfield, Melrose, Johannesburg; capital £200,000.

4048. The Transvaal Oil Shale Syndicate, Ltd., c/o Mayer Goodwin, 32, Royal Chambers, Simmonds Street, Johannesburg; £60,000.

Additions and Alterations.

650. South African Permanent Mutual Building and Investment Society.

296. The Luipaardsvlei Estate and Gold Mining Co., Ltd.

Extraordinary and Special Resolutions.

656. Transvaal Consolidated Land and Exploration Co., Ltd., Johannesburg; alteration of articles.

3262. Union Garage Co., Ltd., Johannesburg; section 196, Companies Act, 1909 (No. 31 of 1909).

2365. Hoheisen and Co., Ltd., Johannesburg; amendment of articles.

1810. Inhambane Sugar Estates, Ltd., Johannesburg; adoption of agreement, London Scottish Rubber Syndicate, Ltd.

3730. *Sporting Life* Newspaper Syndicate, Ltd., Johannesburg; appointment of liquidators.

In Liquidation.

The following companies have been placed in liquidation:

3050. Luipaardsvlei Main Reef Syndicate, Ltd., [illegible] voluntary.

3609. Langdon and Williams, Ltd., Johannesburg; [illegible]

1869. Pietersburg Hotels, Ltd., Johannesburg; [illegible]

2984. Potchefstroom Breweries, Ltd., Potchefstroom; [illegible]

3820. Hastie Maze Gold Mining Co., Ltd., Johannesburg; [illegible]

Johannesburg Consolidated Investment COMPANY, LIMITED.

(Incorporated in the Transvaal)

Notice of General Meeting of Shareholders.

NOTICE IS HEREBY GIVEN that the Ordinary General Meeting of Shareholders in the above named Company will be held in the Board Room of the Johannesburg Consolidated Investment Company, Limited, on WEDNESDAY, the 23rd OCTOBER, 1912, at 11.30 o'clock in the forenoon, for the purposes following:—

To receive and consider the Statement of Accounts and Balance Sheet for the period ending the 30th June, 1912, and the Report of the Directors and Auditors thereon.

To elect four Directors in place of those retiring, in terms of the Company's Articles of Association.

To elect Auditors, and to fix their remuneration for the past financial year, and to transact any other ordinary business of the Company.

By Order of the Board,

W. H. MARDALL, Secretary.

Johannesburg, 31st August, 1912. 42018

THE "S. A. MINING JOURNAL"

Mining Machinery and Material Directory

and List of Professional Men (Engineers, Assayers, &c.) practising in various parts of South Africa, Shipping and Forwarding Agents, Company Notices and Reports, and Miscellaneous Advertisements.

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