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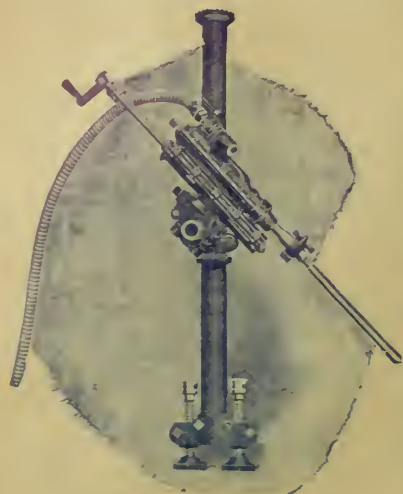
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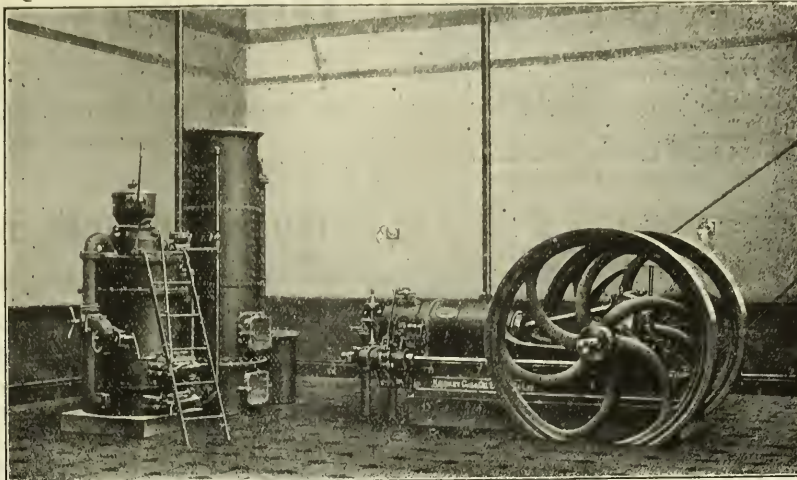
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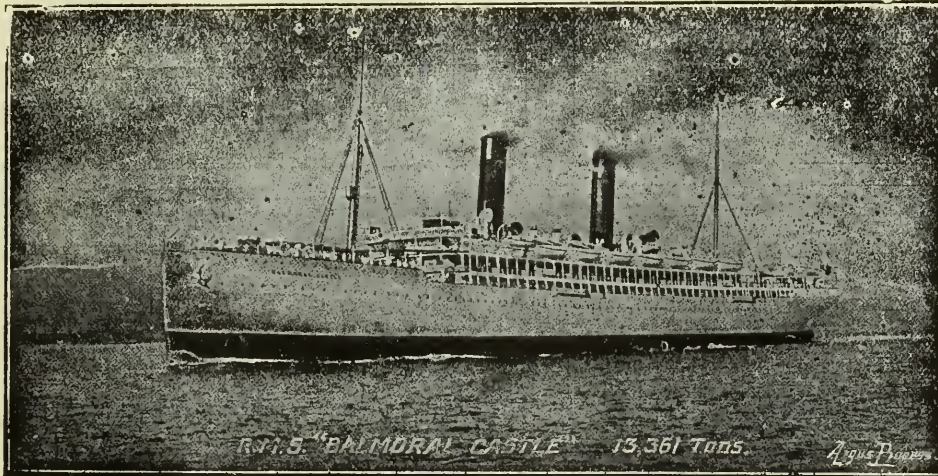
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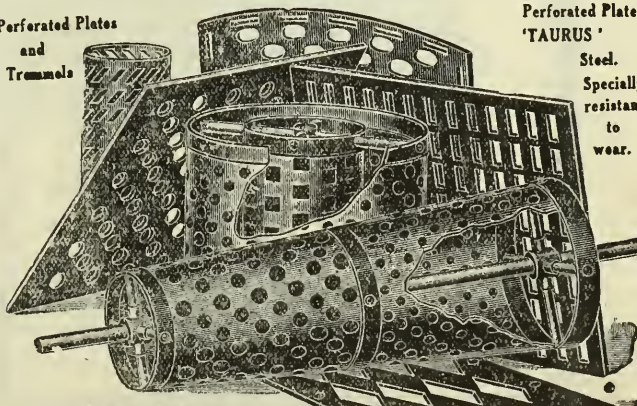
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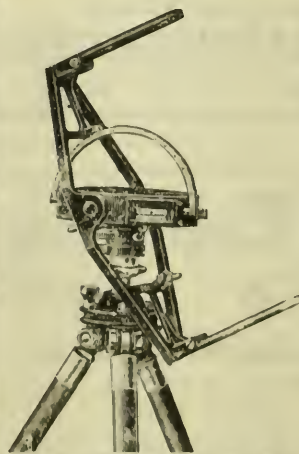
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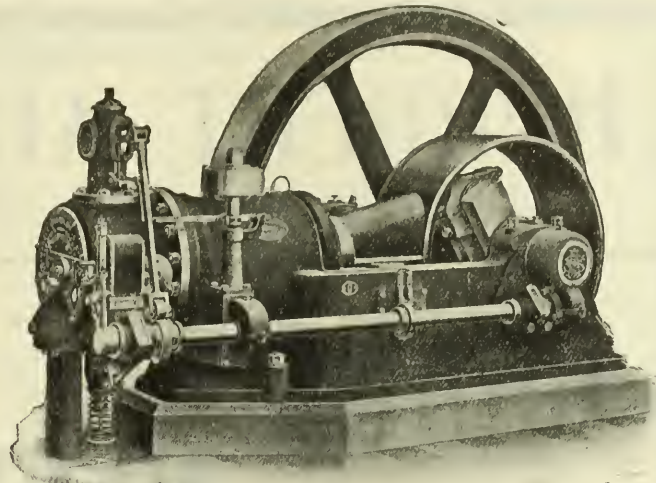
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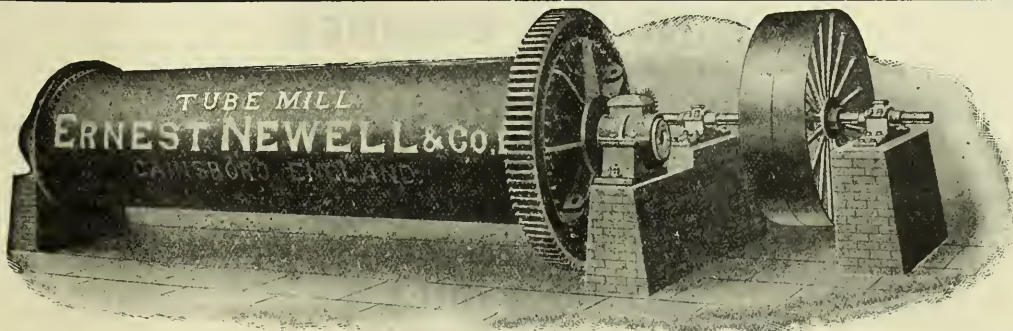
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**Notes and News.**

The circular shaft of the New Modderfontein Company will be completed about the end of the month. The only work that remains to be finished is a certain amount of walling. When this has been done the shaft will be ready to play the highly important part in the future of the New Modderfontein Company for which it is destined.

**The New Modderfontein Co.'s Circular Shaft.**

The resignation of Mr. C. H. Spencer from the Consolidated Main Reef and Main Reef West, and the taking over of the reins of management at those properties by Mr. J. E. Healey, formerly manager of the New Unified, has necessitated the appointment of a new manager at this latter mine, which is under Barnato control. We learn that Mr. E. A. Douglas recently has been appointed to succeed Mr. Healey.

**A Managerial Change.**

The statistics published by the Union Mines Department last month show that throughout South Africa 31,380 whites and 275,060 coloured persons were employed on mines as compared with 31,656 whites and 277,939 coloured employees at the commencement of the statistical year in July last. The total value of the mineral output (excluding diamonds) for the month was £3,550,687, of which gold contributed £3,295,357. The essential features of the December gold output having already been recorded, we will proceed to review the outstanding figures of the coal and base metal returns. In all 65 collieries were at work in the Union—31 in the Transvaal, 9 in the Cape, 5 in the Orange Free State, and 20 in Natal. The total production was 682,769 tons, valued at £163,803, as compared with 667,536 tons, worth £162,381, in November. The Transvaal's output increased from 382,632 tons to 411,631 tons. There was a very small decline in selling price at pit's mouth, and the value advanced by £5,600 to £87,755. The Natal output declined from 235,182 tons, valued at £65,218, to 222,833 tons, worth £61,614. Of the 31 coal mines producing in the Transvaal 15 were in the Middelburg area, and their combined output was 309,960 tons, realising £65,218, or 4s. 2.5d. per ton.

Turning to the outputs of tin and copper, it is satisfactory to note that the sales and shipments of Transvaal tin ore aggregated 221.8 tons of 68.97 per cent. value, or £31,109, as compared with 134.7 tons, worth £18,943, in November, and 206.5 tons, worth £28,940, in October. Evidently the resumption of crushing operations at Zaaiplaats, in consequence of securing sufficient water, has brought production up to normal again. No tin ore was produced in the Cape. As to copper, 280.5 tons, worth £8,731, were shipped and sold from the Transvaal, and 1,001 tons, worth £244,888, from the Cape. In November the Transvaal sold and shipped no copper ore, and from the Cape 927 tons were despatched.

We learn that Messrs. Gauf and Ewan Currey have taken an option over ground on the immediate extension of the New Thor diamond area. Mr. Jas. Murray is said to have been appointed to conduct the prospecting operations.

The directors of the Consolidated Mines Selection Company, Limited, anticipate, from the position of the company as at December 31, that they will be able to recommend to the shareholders at the next annual meeting, about April next, a dividend of 10 per cent., free of income tax, for the financial year ended last December.

It now has been ascertained that the original estimate as to the depth at which reef will be intersected in the Springs Mines property will be exceeded, owing to reverse faulting which produced a downthrow of the strata estimated at about 275 feet. During the quarter ended with December last the north shaft was sunk 353 feet to a total depth of 3,110 feet, and the south shaft to 2,850 feet. In the north shaft the Bird Reef and "Modderfontein Series" were in turn passed through at depths of 2,858 and 2,979 feet respectively. The remaining depth to the reef is, according to the company's officials, "in the nature of things impossible of exact calculation, but if normal conditions prevail the reef should be cut at about 3,450 feet and the date of intersection should be early in March."

\* \* \* \*

Reference to the "Modderfontein Series" in the Springs Mines report recalls the fact that the New Modderfontein Company originally was floated to work this overlying series of conglomerates, which, on the Further East Rand are over the greater part of the area merely regarded as markers and of little, if any, commercial value. We believe that there is still a certain tonnage of ore on this body standing developed in the western section of the New Modderfontein, but it is of very low grade value. In the Orient claims now included in the New Kleinfontein property, the Modderfontein Series was worked years ago, but in these claims as in the New Modderfontein the underlying Main Reef Series, or the Van Ryn Series, as it is termed in Further East Rand phraseology, is now the chief, in fact, the only, contributor to production.

\* \* \* \*

Milling operations commenced at the Brakpan Mines property about the middle of 1911 so that 1912 may be said to have been the company's first completed productive year. With the publication of the report for the quarter ended with December last one can state in exact terms what the year's work has brought forth. The aggregate result wholly is in keeping with the great promise of the proposition, and it is eminently satisfactory to note that in each quarter the results secured were in advance of those won in the preceding period. Thus in the March quarter 130,019 tons were milled for a profit of £70,715. In the next three months the tonnage was 156,946 and the earning £112,069. The September quarter witnessed a further advance to 171,230 tons and £121,589, whilst in the three months ending December the year's high water mark was reached by the declaration of a profit of £123,667, the result of milling 179,328 tons. Working costs were reduced from 17s. 9d. to 16s. 6d., and including reserve gold transferred to current account in March the total profit amounted to £444,015, the working revenue being just under a million and the ore milled amounting to 637,523 tons. The development work carried out during the final quarter of the year came to 5,626 feet, of which 3,930 feet were on reef averaging 8.8 dwts. over a width of 33.9 inches. Shareholders have every reason to be gratified at the two dividends paid out in the first full year of milling and should also be pleased at the general progress and state of stability disclosed in the last quarterly report.

\* \* \* \*

In our issue of September 14th last we referred to an occurrence of gold near Cradock in the Cape Colony. The discovery was of rather an unusual nature and not only because the Cape Colony never yet has given definite proof of possessing a profitable gold field but also because of the peculiar nature of the matrix we directed attention to this find. We now learn that a small syndicate has been formed locally for the purpose of further exploiting the occurrence. It is understood that Dr. Merensky and Mr. G. A. Troye have expressed the opinion that the discovery is worth some investigation and accordingly Mr. G. A. Troye has been commissioned to report on it. The work

carried out on these discoveries in the Cradock district until recently was done by Cradock people who appear to have expended a considerable amount of time, labour and money on the occurrence. The more recent work has been confined chiefly to a hill situated about 25 miles from the town of Cradock and known as Spearman's Kop. Here an adit has been driven about 250 feet into the side of the hill and has exposed a formation which is stated to contain several dwts. of gold per ton over a width varying between 18 and 24 inches and in some places as much as four feet. The formation, which contains a so-called "pudding-stone" rock carrying chalcopyrite includes small quartzite leaders containing visible gold of capillary and malleated form, and it is stated that in addition to gold the "reef" contains a certain amount of platinum.

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So far the British East Africa Protectorate has afforded no developments in the direction of mining, but this must be ascribed to the archaic Mining Regulations which at present obtain in that country, since it is a practical certainty that precious metals must sooner or later be encountered in more or less payable quantities. For some years past, indeed, local rumour has been busy with reports of isolated discoveries of gold, coal and even diamonds, and now that a new and more sane Mining Law will shortly come into force, the Colony's first mining prospectus is to hand. The East African Exploration, Development and Mining Company, Ltd. (incorporated under the Indian Companies' Act, 1882-1900), is inviting subscriptions for 2,250 ordinary shares of £6 13s. 4d. each, while 750 shares of the same denomination are held in reserve. There are 375 fully paid 6 per cent. preference shares, also of the same denomination, and the vendor is to be allotted 1,125 ordinary shares, besides the whole of the preference shares for his services and plant in lieu of any cash remuneration. In all the capital of the company is £30,000, and in view of its smallness, it must be assumed that this concern is intended to be a parent company, and that subsidiary flotations may be looked for as soon as its objects are attained. The company's five directors are men of good standing in the Colony, but interest principally centres around Mr. Marquardt, who will join the board as managing director after allotment. Mr. Marquardt has had over twenty years experience in Africa as a prospector and director of mines, and has for some years past been General Mining Director to H.M., the Negus Menelik II. of Abyssinia, and on him the ultimate success of the company's operations would appear to entirely depend, as he seems to be the only practical mining man on the board. The directors state in their prospectus that they do not consider it advisable that the discoveries now in the hands of Mr. Marquardt should yet be made public, and that the shareholders must leave a great deal in this respect to the directors, though shareholders may look for a considerable amount of information in the near future. Personally, we should insist on having the information before the company had our money. Should coal have been encountered in payable quantities, and of fairly good grade, as indicated by the prospectus, it will mean a great deal in the development of the Protectorate, and will find a ready sale with the Uganda Railway and its fleet of steamers on the Victoria Nyanza, besides being in great demand with the manufacturing concerns which are springing up on all sides in the Protectorate. From a business point of view it would seem that shareholders are trusting rather too much to the knowledge and judgment of one man.

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There seems to be little doubt that the Cam and Motor will become one of the largest mining properties of Rhodesia. The development work accomplished during the financial year amounted to 5,358 ft. The latest news shows that at the sixth level, 650 ft. below the surface, the lode has again been intersected. At all the cross-cuts put out at this point, the deepest levels have given as good widths and values as in the upper levels. The ore reserves are also satisfactory, and when last reported amounted to 930,000 tons. From the

end of the month, instructions have been given to prepare for stoping, and there will be sufficient ore available to treat 15,000 tons, which is the present capacity of the plant. The total working costs will be about 23s. per ton, and the gross value of the ore 46s. 2d., extraction being taken at 85 per cent. The big plant now being erected will cost £116,000, of which £70,000 is available in cash. The balance will be obtained by means of the 25,000 new shares at 35s., thus leaving a substantial balance over. In addition, the company also holds the valuable Cam-Good Shepherd and Petrol block of claims, which in days to come should give a good account of themselves. One of the directors, Mr. Samuel Weil, visited the properties during the year, and he was very favourably impressed with the position and prospects of the company.

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The report of the South African Option Syndicate, Ltd., for the year ended 31st December, 1911, presented to the meeting on the 16th instant, states that an amount of £6,836 was spent during the year on prospecting and development of the diamond areas. It was decided last year to concentrate work on the Wessels area, and all other prospecting was discontinued. The work on that area consisted of over 2,000 ft. of driving and numerous shafts sunk on the line of strike: the fissure has now been traced for about 1,200 ft. Its thickness varies from 3 ft. to 7 ft., and, commencing near the surface, has been followed to a depth of about 100 ft. vertical. In the fissure ground which has been washed, diamonds of good quality have been regularly met with in small quantities. In September last it was decided to obtain the best technical opinion available as to the work to be continued on this area, and for this purpose the Board called in the assistance of Mr. Minett Frames, a well-known diamond authority in South Africa. Mr. Frames has made a thorough examination of the Wessels area, and in his opinion the fact that diamonds have been found on the property is sufficient justification for further careful prospecting. He has advised on the further work to be undertaken, which is now in progress. With regard to the Colossus mine, he states that the mineral is a true Kimberlite, and the boulders of granite and basic igneous rocks enclosed in the pipe matter are rounded in a manner similar to those found in other well-known pipes; that the general appearance of the ground lying at the various pit heads is good, and though a fair amount of hard blue is seen, it will yield to treatment by crushers and rolls. He advises that a rotary pan should be erected at a convenient spot and the various dumps and tailing heaps further tested. A small revenue in licences has been received during the year from diggers on the Somabula area, who have lately met with encouraging success. During September the recovery of 43 diamonds, weighing 70½ carats, was recorded, the largest stone weighing 12¼ carats, and being of good quality. During the last twelve months the developments at the Connemara mines have been highly satisfactory, and the latest report received, dated 25th September, states the ore reserves at that date amounted to 168,949 tons, of a value of £275,103, for the most part contained above the first level. The main shaft is now down to the third level at 250 ft. from surface, which, together with the second level, is being rapidly developed. The values in the sulphide zone are being well maintained, and it is expected that the ore reserves will soon be greatly increased. The syndicate's interest in the mine promises to be a most valuable asset. A most important feature is that, in addition to the above developments, trenches situated 455 ft. and 1,000 ft. north of the present workings have recently disclosed the reefs of from 40 to 58 ft. in width of good values, so that there is every probability of this property developing into a mine of large dimensions. The erection of a reduction plant for experimental treatment of the ore is now under consideration. The property has recently been formed into a separate company—the Connemara Mining Company—with a nominal capital of £250,000 in 1,000,000 shares of 5s. each, this company's interest being represented by 80,000 fully-paid shares.

## TOPICS OF THE WEEK.

### DENUDATION IN SOUTH AFRICA.

"A close study of sub-aerial denudation throughout the country, and especially in Central South Africa, may assist enormously in directing the search for precious stones and metals into the right channels, ultimately leading to their valuable sources." In these words, which formed the concluding portion of an extremely interesting valedictory address, Mr. H. S. Harger, the retiring President of the Geological Society of South Africa, summed up, the other evening, a long review of those processes of nature which, during the dim ages which preceded the advent of intelligent life upon the earth, were ever busy, piling down and eroding the rocks of this sub-continent and scattering its debris with impartial and reckless hands over thousands of square miles of land surface, and beyond it again, into the unfathomable depths of the sea. From a purely geological point of view, the consideration of this vast wasting away of a land, which once rose into the clouds at a level many thousands of feet higher than that attained by its topmost peaks to-day, is absorbingly attractive, but it has an equally, if not more, attractive side for the economist who reflects upon the great stores of mineral wealth which have been gathered from the mass of eroded material and now lie here and there, distributed in valueless particles or gathered into rich treasuries of potential wealth. The subject was discussed by Mr. Harger from both sides, and although the vastness of his theme compelled him to limit his treatment of it to a mere outline, he found himself able to dwell at some length upon its most salient and important points, and to elucidate it by means of a quantity of evidence and suggestion, which afforded another proof of that painstaking thoroughness that is to be discerned in his previous contributions to the Transactions of the Geological Society. The wonderful story of the forming of the great system of the Karroo, and the still more wonderful tale of the volcanic period which followed, and which gave rise to a laccolithic rock structure which, in point of size, is not equalled by any other similar occurrence in the world, have always been a fascinating topic with geologists who cultivate the gift of imagination. It has been left to Mr. Harger to deal with this period on a less imaginative but more truly scientific basis, and he is to be congratulated upon the admirable way in which he has carried out his task. The effects of the sub-aerial changes which have been brought about in the superficial arrangement of this part of the globe are sufficiently important to warrant much more than an academic interest. The alluvial deposits of diamonds, gold and tin which have rewarded already the work of exploitation in greater or less degree are probably but an insignificant portion of all those which exist in various parts of South Africa, and it is only by intelligent enquiry and a liberal expenditure of money such as Mr. Harger pleads for that an adequate knowledge of these deposits can ever be acquired. As he says: "The presence of such diamondiferous gravels over a restricted portion of the Transvaal convinces me, after extended investigations, that enormous wealth, in the form of rich diamond mines, awaits discovery and exploitation in the Western Transvaal. That, in other words, is one of the harvests which may be anticipated as a result of scientific investigation and enterprise on the part of capital." Before leaving the subject of the valedictory address, we take the opportunity of drawing attention to Mr. Harger's remarks concerning the geological museum. While thanking the Government and the Johannesburg Municipality for their financial support towards the upkeep of the museum, he said: "In view of the importance of the mineral wealth to the country at large, it is regrettable that no provision has yet been made for the erection of a museum building in this town, which is the centre of the mining industry." If, instead of thanking the bodies referred to for their small donations, the President of the Geological Society had expressed disgust at the contemptible nature of this assistance he would have voiced the opinions of a large number of the citizens of this town, and, needless, to add, since we have already had something to say upon the matter, of ourselves.

## THE DIAMOND TRADE IN 1912.

As long as the older diamond mines continue to contribute to the revenue and production of this country, and the newer diamond ventures attract the attention of the small capitalists, the course of the oversea diamond market must remain of vital importance to us all on this side. Taken all round, 1912 must be considered a very favourable one for all interested in trading in diamonds: there were periods of quietude, brought about by political unrest, but the trade maintained a bold front against the fears of serious international complications, which cannot be said of many world industries. The beginning of the year was not brilliant; the general lull in the trade which always occurs just before and after the end of any year had been accentuated by a few failures of more or less importance in Antwerp and Amsterdam, and dealers and cutters in those cities were for a few weeks loth to increase their stocks. This state of affairs was, however, of short duration. The condition of the market had been all along inherently sound, and the upward movement, brought about by keen demand for goods, shortly commenced. About the end of January large lines of business were reported in Argentina, where trade has expanded remarkably. Most of the leading Paris, Antwerp, and Amsterdam houses are now represented at Buenos Ayres. From January onwards the industry went ahead, the demand for the rough articles being always far in excess of the supply, and in consequence a gradual rise in prices has taken place in all classes of goods, especially the common qualities and small sizes. The demand for common qualities is, of course, mainly accounted for by the multifarious uses to which the diamond is now put in industrial enterprises, especially in electrical and engineering projects. During April small-sized goods came into exceptional notice, due largely to purchases by Japan. The practice had been for buyers of series of rough goods to sell the small at a big reduction, making up the loss in the price of their larger goods. Owing to the rise, the cutters were able to get nearly full prices for their "small," thus reaping very considerable profits all round. The rise in the smaller-sized goods naturally was of great importance to mines like the Wesseltion and Bultfontein, which produce so large a proportion of these diamonds. The rise in these goods was soon followed by an advance in other sizes, yet all stocks on offer by the Diamond Syndicate, the Premier Company, and the outside houses were greedily absorbed. The Syndicate and the Premier Company in June were able to raise the prices of their small goods from half-carat down by 5 per cent., thus bringing them into line with the advance in larger sizes. When it is considered that prior to the early part of the year cutters had to sell their "small" with a considerable loss on Syndicate prices, the raising of these prices and the absorption at these rates give the strongest possible proof of the real strength of the market. September was again a good month for the trade, large sales of brilliants taking place, chiefly on American account. Early in October the trade had to face the Balkan troubles; but, in spite of this, business continued as brisk as ever, and in the middle of the month the Diamond Syndicate and the Premier Company raised prices all round by a further 5 per cent., and at the advance ready purchases were forthcoming. Much controversy was raised in diamond circles by the foreshadowing at the meeting of the Johannesburg Consolidated Investment Company of a possible diamond combine. There are signs that some such consummation is still contemplated. To sum up, it has been a more than satisfactory year's trading. Perhaps the outstanding feature has been the entry of the

overseas countries, such as Argentina, Canada, and the Central American States, as large consumers. China and Japan have also been big buyers, while the largest consumer of all—the United States—has imported a record amount, taking nearly £8,500,000 worth of diamonds. The future of the diamond industry may be regarded, not only with equanimity, but with unqualified optimism. The wealth of the world is yearly increasing, fresh outlets are being found and provided international peace is preserved, in the opinion of well-informed authorities 1913 will see such business as will even put last year's splendid results in the shade. According to the *Financial News*, to which we are indebted for most of these particulars, the market is as sound as possible and the stocks of rough and cut goods in the hands of dealers are alike infinitesimal.

## THE POSITION OF THE RANDFONTEIN CENTRAL.

NOT the least interesting statement made by Sir J. W. Langerman at the annual meeting of the Randfontein Central, which was held on the 22nd inst. was that regarding the ore reserve position. We have referred to this matter upon several occasions during the last year or so, and in view of this circumstance we take the opportunity of referring to it again in order to make a comparison with the assistance of the latest information. The figures for the past three years are as follows:—Randfontein Central: End 1909, 1,823,923 tons, value 7.7 dwts.; during 1910, 998,790 tons, value 6.6 dwts.; end 1910, 2,822,713 tons, value 7.3 dwts. South Randfontein: End 1909, 2,606,724 tons, value 7.8 dwts.; during 1910 (excess), 104,866 tons; end 1910, 2,711,590 tons, value 7.8 dwts. Both companies: End 1910, 5,534,303 tons, value 7.54 dwts. The payable tonnage developed by the South Randfontein during 1910 was 1,273,147 tons, but since 1,168,281 tons were milled during that period the excess quantity added to the reserves was 104,866 tons. The amalgamated properties made their first declaration in March, 1911, with 700 stamps and 18 tube mills, including 300 stamps and some tube mills in the new 600 stamp mill. At the end of 1911 the payable ore reserve was 5,658,859 tons of a value of 7.29 dwts., and by comparison with the figures quoted by Sir Jan Langerman in his recent speech they stand thus:—End 1911, 5,658,859 tons, value 7.29 dwts., increase 124,556 tons; end 1912, 6,350,781 tons, value 6.8 dwts., increase 691,922 tons. There is evident a diminution of the value during the last three years, but it is gratifying to find that the excess development has been increasing, so that where there was an addition to the payable reserves of 124,556 tons in 1911 there was an addition of more than five times this quantity last year. The development figures for 1911 and 1912 are as follows:—1911: 87,541 linear feet; inclusive shaft sinking, 1,717 feet; stations, sumps, etc., 527,668 cubic feet. 1912: 81,445 linear feet; inclusive shaft sinking, 1,433 feet; stations, sumps, etc., 321,711 cubic feet. A considerable reduction in the footage, both linear and cubic, is apparent in this statement. During 1910 there were driven altogether, in the Central and South sections, 108,404 linear feet, of which amount 40,219 were driven in the South mines. Although the tonnage has been largely increased, the rate of development, judging by the performance of the south section, the producing property, in 1910, has not been improved upon. The reserve figures as at the end of 1912, show upwards of a two years' supply, on the basis of full running at the Central Randfontein, and in view of this fact the future development policy of the undertaking will be followed with interest.

## THE EASTERN AND NORTH-EASTERN TRANSVAAL.

### Little Developed Outside Gold Districts—The Possibilities of Haenertsburg and the Murchison—The Promise of the Lydenburg Field.

NEXT to the Witwatersrand, the large area of the eastern and north-eastern Transvaal, which includes the gold fields of Lydenburg and the Murchison Range together with the various minor auriferous deposits and which lie in the country between Marabastad and Leydsdorp, is without doubt the most important mineral region in the Province. This region is shown in the geological sketch map which accompanies this article, and extends eastwards from that portion of the country which was depicted in the sketch map that appeared in the last issue of the *South African Mining Journal*. Here, again, the vast extent and influence of the Bushveld igneous intrusion are strikingly in evidence, and the rocks of the Transvaal system which emerge around its edge are faulted and metamorphosed to a remarkable degree. The shales and quartzites of the upper portion of the system, those, namely, belonging to the Pretoria series, are so intensely metamorphosed that the shales have, along certain horizons become thoroughly crystalline gneisses, with complete loss of almost all the original characters of shales. Lying below the Transvaal system, unconformably, are the quartzites, schists, gneisses, and other sedimentary and igneous rocks which, with the older granite, comprise the Swaziland system, whereon, as upon a floor, rest all the distinctly sedimentary formations of the Transvaal.

#### THE MARABASTAD GOLD FIELDS.

Taking the various districts in order, beginning at the railway line which runs from Potgietersrust north-east to Pietersburg, we enter, first of all, the Smitsdorp gold field, one of the oldest in the country, and famous as having been the scene of some interesting conflicts between Boer commandos and British infantry at the beginning of the war of 1881. An old stone chimney at the Balkis Eersteling mine which the Boers in vain tried to wreck, is still one of the historic objects of the neighbourhood. In this area are included the alluvial and reef gold occurrences on Waterval and Vriessgewaagd.

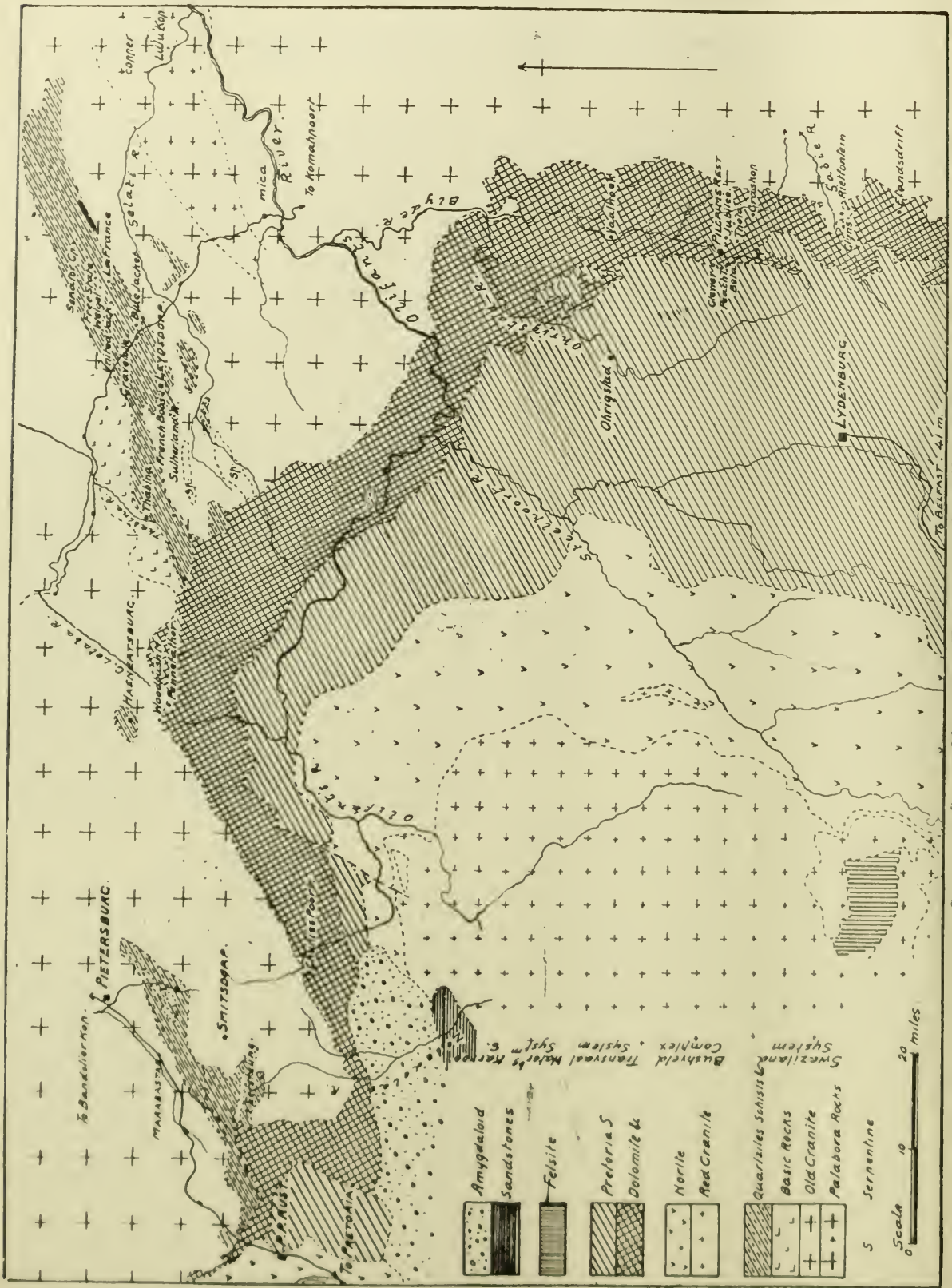
#### THE HAENERTSBERG AREA.

Further to the east along the escarpments of the Haenertsburg and Strydpoort Ranges, amid woodland and mountain scenery which are remarkable for their beauty, are to be found old workings which testify to the energy if not to the success of a bygone race of miners. In his report upon the district in the records of the Transvaal Geological Survey, Mr. A. L. Hall, who is probably more intimately acquainted with this region than any other living person, remarks:—"On the whole, the area under review is not of first-rate importance economically, though it seems indicated that more vigorous prospecting in certain areas would be rewarded with success, for a considerable portion of the district is quite unknown and does not appear to have been prospected at all." This gold field is almost entirely made up of the Black Reef series and the dolomite. Mining has been carried on principally at the Woodbush mine, situated in the granitic area south of Haenertsburg; and at the Pennefather and New Found Out mines, on the Black Reef series. There are also alluvial workings on the Wolkberg. In the western portion of the Haenertsburg gold fields, between the M'Thlapitsi and Malips Rivers, very little prospecting appears to have been done. Near the base of the Pretoria series, in the lower part of the thick series of ferruginous slaty quartzites, as well as in the inter-bedded band of the same rock in the dolomite, blue crocidolite occurs in considerable quantity. It is found in thin veins interbedded with the shaly quartzites, and varying from half an inch down to mere films. Such veins are often crowded together in the hand specimen and, when fresh, consist of soft, pale blue, silky fibrous crocidolite. Certain varieties of the mineral are brownish yellow in colour and

approach "Tiger's Eye" in appearance, but are not suited for the production of asbestos fibre. Though the veins of the blue asbestos rarely exceed half an inch in width they are very abundant along the southern edge of the Haenertsburg gold fields, between the Malips and the M'Thlapitsi Rivers. The bulk of the Canadian deposit, however, is not more than half an inch in width. Between the Olifants River and the Drakensberg is a large portion of country which is marked as "unsurveyed Government land." It is extremely mountainous and difficult to penetrate, but the Transvaal system is well exposed there, and the base of the Pretoria series, as well as the upper portion of the dolomite, would possibly well repay the attention of the prospector. A rock resembling the Bevets Reef of the Lydenburg district was met with in this area by the Geological Survey, on the Steelpoort River, a little above the junction of this stream with the Olifants River. Asbestos resembling some varieties of the mineral as found east of the Malips River is also to be met with in the "unsurveyed" portion and the ground immediately adjoining it along the right bank of the Olifants River. One occurrence showed veins  $6\frac{1}{2}$  inches wide, but the fibres do not well withstand heat. It is possible that the quality may improve in depth, as the material examined had been long exposed. Chromite deposits are fairly numerous and extensive. They occur along a more or less well defined horizon in the norite, from near the junction of the Malips and Olifants Rivers, south-eastwards for many miles—at least as far as the Steelpoort River. An outcrop ore from Mooihoek (147) gave, on analysis, 51.29 per cent. chromic oxide, and was thus very promising as compared with ores from other parts of the Transvaal. In his report, which appears in the Survey Report for 1907, Mr. Hall observes that:—"It appears that the economic possibilities of this portion of the eastern Transvaal are such as to encourage efforts on a small scale. The formations likely to be mineralised are well exposed, and the presence or absence of payable ore bodies could probably be decided without very great expenditure. The unsurveyed portion of the Haenertsburg gold fields, so far as the upper part of the dolomite and the Pretoria series below the Timeball Hill quartzite are concerned, are apparently quite unknown, and it is possible that prospecting in this region might meet with success."

#### THE MURCHISON RANGE.

The Murchison Range district, which was described at some length in a memoir by Mr. A. L. Hall, from which copious extracts were published in this journal last year, does not need further description at the moment. It is included within the limits of our geological sketch map, and as will be seen, comprises within its area a wide extent of granitic and gneissic rocks similar to those which appear from beneath the Transvaal system in the Marabastad country to the west. Through these, in this neighbourhood, a younger intrusive series of plutonic rocks also appears, ranging from granite, through syenites to pyroxenites, and constituting a younger petrographical province not unlike the Bushveld Plutonic Complex. It is known under the name of the Palabora Plutonic Complex, and the important mica-bearing pegmatites south-east of Leydsdorp, which probably have no genetic connection with the older granite, doubtless represent—as the residual mother liquor of the younger magma—the last phase during the consolidation of the Palabora group of rocks. There is perhaps not much opening along the Murchison for mining enterprises upon a large scale, but properly directed undertakings with a moderate capital might prove abundantly successful. The absence of railway communication, only lately remedied, and the difficulty in the matter of a reliable and adequate water supply—a question which we understand is now engaging the attention of the Government—have hitherto been serious drawbacks to progress in this region. With better facilities



GEOLOGICAL SKETCH MAP OF THE EASTERN AND NORTH-EASTERN TRANSVAAL.



there seems no reason to doubt that the old-time activity will once more prevail, and that the "small man" may find the district a solidly attractive one.

**THE LYDENBURG DISTRICT.**

The districts already referred to comprise an area which has been but partially prospected; the Lydenburg district, on the other hand, which is represented in our map, is pretty well known to prospectors, and is the centre of a highly productive mining industry. There is much yet to be done, however, before the field can be said to have been worked to anything like its full capacity. It is eminently a field for the worker of modest means, although circumstances and an unsympathetic Government have made it extremely difficult for such a person to find his opportunities as conveniently as might be desired. In 1906 Mr. A. L. Hall remarked of this field:—"In the central portion of the Lydenburg district the exploitation of the auriferous horizons in the upper dolomite near Pilgrims Rest constitutes by far the most important economic development and the only industry of the district. When it is remembered that about 110 white people and, roughly, 2,000 natives are directly dependent on this industry, while a considerable proportion of the general population is indirectly affected by its fortunes,

and that, next to the Rand, it supplies the largest contribution to the gold output of the Province, it is evident that the Pilgrims Rest district forms a valuable and important asset." To-day there are engaged in mining operations in this district 355 whites and 5,388 natives. In an article which was contributed to our anniversary number by Mr. Arthur W. Hendren Frost, F.R.C.I., the writer said:—"The gold fields of the Pilgrims Rest mining district are the oldest centre of the gold industry in South Africa. Situated in the dolomite formation of the eastern Drakensberg, they were the scene of great activity in the early seventies. More than two thousand diggers were actively engaged in wresting a fortune from the rich deposit of the Pilgrims Rest, Mac-Mac, Graskop and Elandsdriif, which yielded over £1,000,000 worth of gold. The scene has now changed. The Transvaal Gold Mining Estates concession of three hundred square miles has shut up much of the land that meant often more than a competence, and the possibility of a fortune, to the individual digger. The available ground, however, is the scene of great activity now, unrivalled in any other part of South Africa, over a like tract of country. Rhodesia, with its oft-boomed gold industry, can show no district equal to it, unless, perhaps, the Gatooma district, in number of mines or aggregate returns."

**THE YEAR WITH THE ALBU GROUP.**

**Detailed Results Secured by Productive Subsidiaries—Meyer and Charlton's Large Advance.**

We are in receipt of quarterly reports of the subsidiaries of the General Mining and Finance Corporation for the three months ended with December, and thereby are enabled to state the results secured in 1912 and to contrast them with those obtained in 1911. The essential features of production, etc., during the December quarter and also for the past two years, are as under:—

**AURORA WEST.**

During the quarter a total footage of 2,917½ feet was driven, sunk and risen and 80 stamps were at work. The "duty" was 6 tons per day. The working profit was £850 greater than in the preceding quarter. Working costs were at the rate of 20s. 1d. per ton, and the working profit was at the rate of 6s. 3d. per ton. The year's results are:—

	Tons Milled.	Revenue.	Profit.
March quarter ... ..	35,772	£42,529	£7,891
June quarter ... ..	40,741	49,515	8,751
September quarter..	43,975	54,473	12,269
December quarter...	42,106	55,457	13,119
Totals, 1912 ... ..	162,597	201,974	42,030
Totals, 1911 ... ..	131,359	157,200	30,140

**CINDERELLA CONSOLIDATED.**

Three thousand eight hundred and thirty-six feet were driven, sunk and risen at this property. The 80 stamps and 3 tube mills maintained a duty of 8½ tons per day. The working profit was at the rate of 3s. 3d. per ton, and working costs came to 24s. 9d., of which mining absorbed 15s. 4d. Expenditure on capital account was: Permanent works, £11,232 10s. 4d.; excess mine development, £14,952 11s. 10d.; machinery and plant, £12,989 4s. 0d.; buildings, £476 6s. 2d.; total, £39,650 12s. 4d. In the central shaft 68 feet were sunk during the month of October, making a total depth of 2,375 feet. At this point very heavy water was struck and it became necessary to suspend sinking and cut the pump chamber at the 2,000 feet horizon. This work has now been completed and the pumps are being installed.

It is expected that sinking will be resumed towards the end of the current month. The No. 2 electric winder was completed and brought into use on December 1st, and is running very satisfactorily. The results for the year were:—

	Tons Milled.	Revenue.	Profit.
March quarter ... ..	47,240	£67,423	£8,058
June quarter ... ..	55,478	83,062	16,121
September quarter..	53,140	68,469	2,770
December quarter...	55,660	77,853	8,976
Totals, 1912 ... ..	211,518	296,807	35,925
Totals, 1911 ... ..	192,341	266,804	37,888

**MEYER AND CHARLTON.**

At this property the development footage aggregated 1,307 feet. The working profit was at the rate of 25s. 8d. per ton, whilst working costs absorbed 18s. per ton. The profit is £834 10s. 7d. in excess of that for the previous quarter. Working costs show a decrease of 5·182d. per ton. The extension of the concentrates plant has been completed. A new Pearn pump is being installed at the 19th level. The 75 stamps and 2 tube mills maintained a duty throughout the quarter of 6½ tons per head. The mill and cyanide recoveries came to 10¼ dwts. per ton. The 1912 results are reflected in the appended table:—

	Tons Milled.	Revenue.	Profit.
March quarter ... ..	41,472	£83,497	£46,471
June quarter ... ..	42,005	89,581	51,382
September quarter..	42,517	93,241	53,952
December quarter...	42,656	93,283	54,787
Totals, 1912 ... ..	168,650	359,602	206,592
Totals, 1911 ... ..	117,154	207,524	96,728

**NEW GOCH.**

There were 1,269 feet driven, sunk and risen, and 120 stamps and 4 tube mills were at work. The stamp duty was 8·390 tons per day and the working costs were 15s. 11d. per ton. Working profit was at the rate of 3s. 6d. per ton. The

working profit shows an increase of £352 over the preceding quarter. The figures for the four quarters of the year are:—

	Tons Milled.	Revenue.	Profit.
March quarter . . . . .	79,635	£86,065	£14,663
June quarter . . . . .	79,008	82,421	14,308
September quarter..	83,035	80,979	14,110
December quarter...	82,721	80,367	14,462
Totals, 1912 . . . . .	324,399	329,832	57,543
Totals, 1911 . . . . .	346,862	418,753	127,920

#### ROODEPOORT UNITED MAIN REEF.

During the last quarter of the year the working profit was £3,682 18s. 6d. less than that for the previous quarter, owing to the low grade of the ore milled. Development of the ground to the east of the Kimberley Roodepoort shaft still continues to disclose satisfactory values, but, as pointed out in the previous quarterly report, some months must elapse before stopping operations can be started up in this particular section. There were driven, sunk and risen 5,142½ feet, the ore mined was 113,898 tons, and ore milled 92,130 tons. From 50 to 55 stamps were operated, and the duty per stamp per day was just under 20 tons. The margin of working profit earned was only 1s. 4½d. per ton, the revenue per ton being under a sovereign and working costs ruling at 18s. 3-291d., of which "mining" absorbed 10s. 7d. The figures for the year are:—

	Tons Milled.	Revenue.	Profit.
March quarter . . . . .	85,623	£90,241	£12,171
June quarter . . . . .	94,038	94,401	13,130
September quarter..	90,618	91,454	10,057
December quarter...	92,130	90,555	6,374
Totals, 1912 . . . . .	362,439	366,651	41,732
Totals, 1911 . . . . .	366,490	398,584	82,308

#### VAN RYN.

Here the development footage aggregated 3,747 feet. The reduction equipment at work was from 135 to 140 stamps and 6 tube mills, and the average duty per stamp per day was over 10 tons. The working profit was at the rate of 12s. 5d. and was £1,514 in excess of that earned in the previous quarter. The results for the year have been:—

	Tons Milled.	Revenue.	Profit.
March quarter . . . . .	116,400	£162,408	£73,269
June quarter . . . . .	116,050	161,139	70,573
September quarter..	119,110	161,550	71,426
December quarter...	117,230	165,204	72,940
Totals, 1912 . . . . .	468,790	650,301	288,208
Totals, 1911 . . . . .	436,356	599,768	272,805

#### WEST RAND CONSOLIDATED.

This company's working profit for October, November and December months was £3,021 higher than in the preceding quarter. Development totalled 4,433 feet, ore mined 111,495 tons, and ore milled 88,070 tons. One hundred stamps and 4 tube mills were in operation and the duty was 11,139 tons. The margin of profit earned was 5s. 11d. per ton, working costs being at the rate of 23s. 6-53½d., of which mining claimed 14s. 7d. and development redemption 2s. 2-5d. On capital account £10,428 was expended, of which £2,060 went on excess mine development. The figures for the four quarters are:—

	Tons Milled.	Revenue.	Profit.
March quarter . . . . .	84,600	£100,724	£10,457
June quarter . . . . .	81,500	109,923	17,597
September quarter..	80,250	117,288	23,100
December quarter...	88,070	129,800	26,121
Totals, 1912 . . . . .	344,420	457,735	77,275
Totals, 1911 . . . . .	319,640	367,816	50,739

## NEW PRECIPITATION METHOD.

### Important Papers by Messrs. MacArthur and Hutton.

At the monthly meeting of the Chemical, Metallurgical and Mining Society of South Africa, held on Saturday night at the School of Mines, a paper was read by Mr. John S. MacArthur, M.I.M.M., whose name has become famous in connection with the original MacArthur-Forrest cyanide process for gold extraction. Mr. Dowling (President) occupied the chair. Mr. MacArthur dealt with a new method of precipitation by zinc. A paper commenting on Mr. MacArthur's ideas in their practical application, as experienced at the Caveira Mine in Portugal, was read by Mr. James Hutton, who gave details from his personal experience as to the working of the new idea. He contended that it would mean a large saving of labour on the Rand.

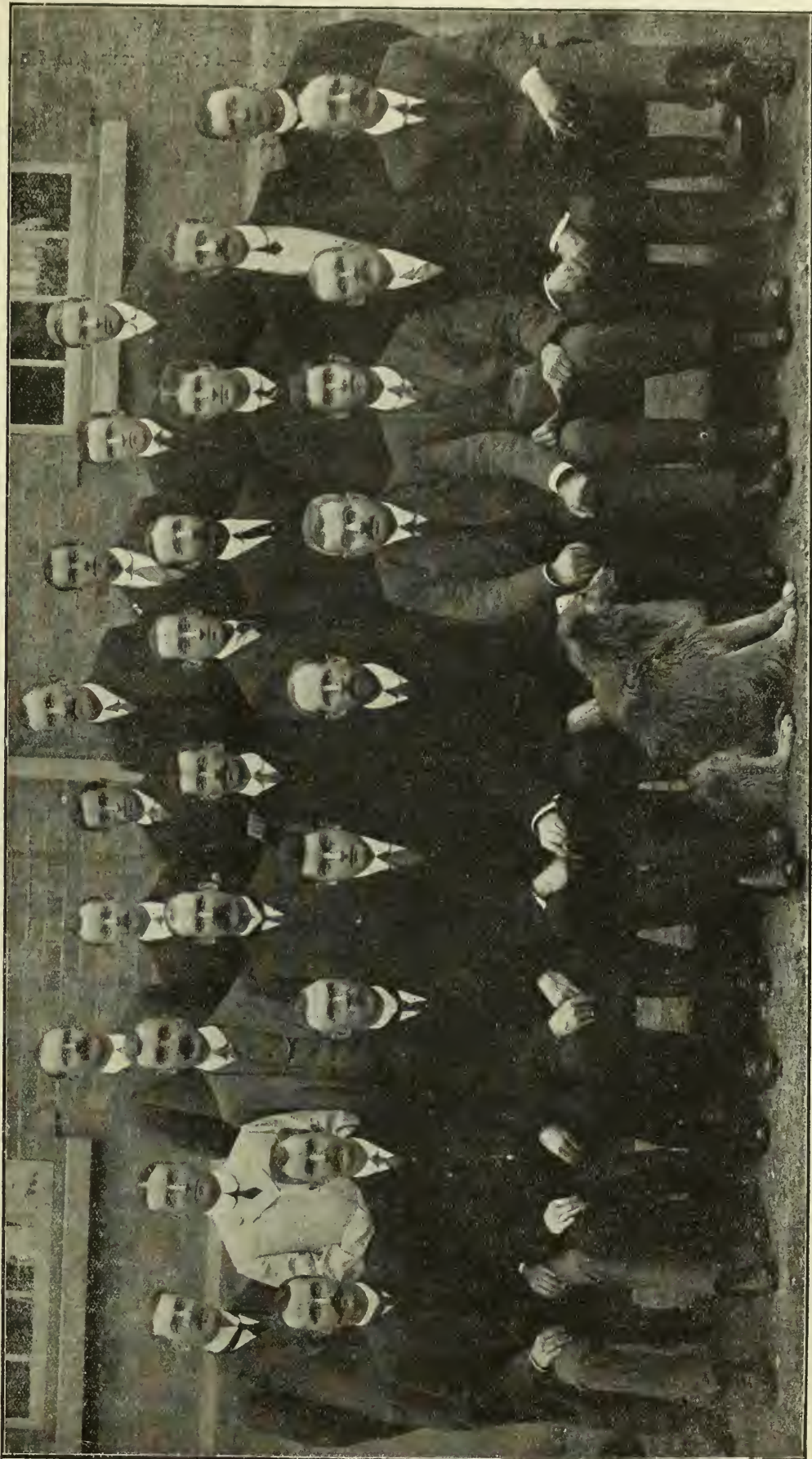
Mr. MacArthur, after referring to the drawbacks of the present system, said: "Recognising these drawbacks to the use of filiform zinc, I aimed to overcome them by the use of zinc sheet cut into wafers of conveniently small size, say, 1in. to 2in. long and about ½in. to ¾in. wide. There is no point in any particular size so long as the wafers are small in comparison to the size of cell of the zinc box, but it is found that oblong wafers pack better and are more conveniently made and handled than those approximately square. The wafers are made by cutting ordinary sheet zinc of any convenient gauge, say No. 11, into strips about 1½in. wide in a book blader's guillotine, and cutting these strips crosswise so as to give wafers 1½in. long and, say, ½in. wide. When the wafers fall into the cell of the zinc box, they arrange themselves irregularly but more or less overlapping, in slant fashion. Each wafer is slightly distorted at the corners by the guillotine; this prevents any sticking and provides channels for the passage of an auriferous cyanide solution, which have the advantage of being narrow and uniform. This means that the solution has equal opportunity of precipitation in all parts of the mass. It has been found that the resistance to the flow of the solution is much greater than with filiform zinc, so that the extractor boxes should be made with a fall at least twice as great as is usual, and at the same time the cells, and therefore the whole box, may be advantageously made only half the usual depth. The method of precipitation was introduced at the Caveira mine in Portugal in 1907. The ore contains about 2.5 gm. of gold and 120 gm. of silver per ton. With coarse crushing the average extraction is about 80 per cent. of the gold and 75 per cent. of the silver. The cyanide plant was equipped with the usual clean-up plant, but as the bullion precipitate was found to contain only about 3 per cent. of zinc and 12 per cent. of other foreign matter—largely impurities remaining from the dissolved zinc—it was found that no acid treatment was necessary. Careful observation of the zinc wafers while in use showed that they become thinner and thinner by use, until at the end of three or four weeks they disappeared altogether without the structural strength

being impaired and without leaving distinguishable debris. The new method of treatment has proved itself economical in consumption of zinc, in avoiding use of acid, and it has greatly simplified the clean-up and thus saved time and temper."

In the course of his paper, Mr. Hutton said:—"As only a very small percentage of bullion is retained on the zinc, it is not necessary to concentrate the zinc the same as is done with zinc shavings by taking the heads of the weak boxes over to the medium and the heads of the medium over to the strong. I see no reason why this method of filling boxes with zinc clippings should not be a success on the Rand. True, here we have a low-grade ore, but as Mr. MacArthur points out, the mine under his supervision in Italy is a low-grade ore proposition, and highly successful results are obtained with the use of zinc wafers. It would be very interesting for anyone who may have a box lying idle to fill a few compartments with zinc clippings and as a precautionary method, if the experimenter is pessimistically inclined, to fill the lower compartment with shavings and use the solution that would, under ordinary circumstances, go through the weak boxes. The author, for one, feels certain that the results obtained would prove the method of precipitation to be worthy of an experiment on a larger scale."

In the discussion on the above papers, Dr. W. A. Caldecott (Past President) said:—"Our Society is to be congratulated upon again receiving a paper from a man of Mr. J. S. MacArthur's world-wide reputation. Besides the original introduction of ordinary zinc shavings as a precipitant of gold from cyanide solution, the author likewise introduced, in 1894, the lead coated zinc shavings now so generally used, of which the original specification appears on page 915 of the second volume of our journal. Without this explanation the casual reference in the paper to a little "chemical dodging" with lead salt would hardly convey the full importance of the author's researches upon this factor in precipitation. The description he now gives us of zinc wafers shows that a quarter of a century after the introduction of the cyanide process the author is still labouring to improve that branch of the work which he has brought before us tonight. As possibly of some little interest in this connection, I may mention that in the early days of the cyanide process at the Sheba I tried a proposal which had been suggested of using granulated zinc in place of zinc shavings, but without much success, probably owing to the small surface exposed in proportion to the weight of the granulated particles. It is to be hoped that Mr. Hutton, in his reply to the discussion of his paper, supplementing that of Mr. MacArthur's, will be able to give the Society data as to the results of zinc wafer precipitation under ordinary working conditions with blanket ore." A hearty vote of thanks was accorded to Mr. MacArthur and to Mr. Hutton for their valuable papers.

THE MANAGER AND STAFF OF THE MEYER & CHARLTON G.M. CO.



*Front Row, Left to Right.*—J. Manks (Surveyor), T. W. Simmons (Battery Manager), S. McCheesney (Resident Engineer), H. B. Owen (Business Manager), H. G. Nitch (Manager), Dr. V. Thalmessinger (Medical Officer), G. D. Clarence (Compound Manager), T. H. Dixon (Mine Captain), W. O. Williams (Cyanide Manager).  
*Second Row, Left to Right.*—A. G. Rusden (assistant assayer), L. F. Devenish Meares (Storekeeper), E. Bell (Chief Timekeeper), J. Williams (Battery Foreman), D. McKindy (Shift Boss), C. A. Albu (Shift Boss), C. J. French (Head Sampler), F. Chamberlain (Foreman Electrician), C. A. Robinson (assayer), S. Pippard (Foreman Fitter), E. G. Vaughan (Sampler), H. A. Soames (Hospital attendant), P. J. Thomas (Assistant Storekeeper).  
*Back Row, Left to Right.*—R. Evans (Foreman Smith), T. Clarkson (Shift Clerk), J. J. White (Foreman Carpenter), E. G. Vaughan (Sampler), H. A. Soames (Hospital attendant), P. J. Thomas (Assistant Storekeeper).

## PROGRESS OF THE BARNATO GROUP.

### Steady Improvement in Monthly Profits Throughout 1912—Points from the Last Quarterly Reports.

ONE of the features of group profits during 1912 was the steady and consistent increase recorded by the subsidiaries of the Johannesburg Consolidated Investment Company. The January earning was £59,227; that for February, £58,273; March, £61,223; April, £63,336; May, £66,133; June, £67,467; July, £68,311; August, £69,525; September, £69,611; October, £71,089; November, £73,339; and December, £77,392. The positions of the seven productive and one developing mines of the Barnato group at the end of the year are lucidly set forth in the reports for the quarter ending with December last just published. The salient features of gold winning and development contained in these are set forth below.

#### CONSOLIDATED LANGLAAGTE.

Probably the most interesting report of the group is that of the Consolidated Langlaagte, where the new reduction plant was started up at the beginning of the quarter. In consequence an increase in the ore milled of 49,605 tons is recorded. Naturally, the working conditions were abnormal. A considerable amount of precious metal was absorbed, and the increase in the gross profit was not more than £9,575. Revenue from accumulated slime was, on account of scarcity of water, less by £7,405. Development results continued satisfactory, over 23,000 tons being added to the payable reserves during the three months.

#### NEW PRIMROSE.

In the September quarter the New Primrose profit rose to a high figure, and it is eminently satisfactory to note that the profit earned in October, November and December only fell short of this attainment by £523. The grade of ore sent to the mill was not maintained, but 2,200 more tons were crushed and working costs were reduced by 10d. per ton. The New Primrose has recently started up a tube mill plant and the operation of this should tend towards a higher recovery. The New Primrose, despite statements as to its approaching demise, circulated in the past, is going to be an important contributor to Rand outputs and profits for some years to come. The dividend paid out last year was £178,750 as contrasted with £227,500 in 1911, but it should be remembered that the 1911 figure includes a special bonus of 30 per cent.

#### GINSBERG.

Reef has been picked up at the plane of the ninth level in the Ginsberg and the east drive has been extended in reef of payable value. Here, too, there was very little alteration in the profit realised, which amounted to £22,480 gross. The grade was slightly lower, but the tonnage crushed was 1,000 tons greater and there was a further reduction in working costs of 4d. per ton.

#### GLENCAIRN MAIN REEF.

The Glencairn, although recovering only three and a half dwts. per ton and crushing 64,704 tons, earned a total gross profit of £9,671. This is £561 better than the amount earned in the preceding three months, there being 3,495 tons more crushed than in the previous quarter. The ore developed during the three months came to 48,100 tons—all in the Knights Tribute section. The values generally have been low, but it is anticipated that a fair tonnage from this section will be payable.

#### NEW RIETfontein.

At the New Rietfontein a state of affairs practically the reverse of those obtaining at the New Unified occurred during the December quarter. Ore of higher grade was sent to the mill, and despite the fact that the tonnage crushed was less than that for the previous quarter by 2,070 tons, the gross profit was practically unchanged. The New Rietfontein, as is well known, is somewhat of an abnormal proposition for the Witwatersrand. The Du Preez series is an

erratic and, one might almost write, a little understood ore body, and in addition to the regular development—which during the quarter opened up 30,507 tons as against 55,597 tons mined—a good deal of prospecting work was carried out in the older sections of the mine. In the vicinity of the No. 1 shaft operations seem to indicate that the formation is of a very broken nature and recently the values exposed have not been so good as anticipated. Despite all its troubles, however, the company was enabled to pay out the substantial sum of £45,756 in dividends for 1912, an increase of £15,252 on the previous year.

#### NEW UNIFIED.

The grade of the New Unified went down during the quarter and was at the rate of 28s. 6d. per ton. Despite this decline, however, the gross profit was maintained at the same rate as in the preceding quarter. This was achieved by reducing working expenses sixpence per ton and treating a larger quantity of accumulated slime. In this section of the Witwatersrand the South Reef is of lower value than the Main Reef Leader. Development of this latter body at the New Unified is approaching completion, and in the future it will be imperative for the management to draw more extensively on the South Reef body. Obviously this will mean a somewhat lesser value per ton of ore sent to the mill unless a marked improvement occurs in the South Reef stope faces. It is gratifying to learn that the southern gold bed has given promising results in places. Apart from the question of value per ton a reduction in working costs would tend towards a maintenance of past profits.

#### KNIGHTS.

At the Witwatersrand or "Knights" mine development from the northern incline shaft in the southern section continued to expose ore of good grade. The amount expended on shaft sinking and equipment of this portion of the property amounted to £13,654. The gross profit at this property was £4,352 higher, due to an improvement in the grade of over two shillings per ton. The ore milled was less, owing to repairs which had to be carried out in the battery.

#### VAN RYN DEEP.

The non-productive member of the group—the Van Ryn Deep—was brought substantially nearer the productive stage during the quarter. The ore reserves were increased to over one million tons of 7.98 dwts. per ton value and considerable work was carried out on the new equipment. In regard to the latter our illustrated article appearing in our last issue set forth the present position. We regret that an error crept into that article. We stated in one portion thereof that the mill would commence work next year. This, of course, should read as this year, i.e., 1913.

### New Transvaal Chemical.

The report of the New Transvaal Chemical Company, Limited, for the year ended June 30 last states that, after charging £11,941 for depreciation, a profit is shown of £34,496. It is proposed to pay a dividend on the ordinary shares of 18 per cent., and after placing £5,000 to general reserve, making that amount £30,000, to carry forward £3,880, compared with £1,734 brought in.

The January number of the *S.A. Mining Directory* will be issued next week. The work has been thoroughly revised and brought down to date. Copies will be duly posted to subscribers. Subscriptions may be sent to the office, 119-120 Exploration Buildings, or P.O. Box 418.

**S.A. Mining  
Directory.**

## ORIGIN AND ACCUMULATION OF OIL.—III.

### Theories of the Last Fifty Years—The Organic and Inorganic School—Important Evidence from California.

In concluding his paper on the "Origin and Accumulation of Oil," Marius R. Campbell briefly refers to theories regarding the origin of petroleum and other hydrocarbons in the crust of the earth, and makes it clear that opinion is still greatly divided and that the amount of positive and unquestionable evidence on one side or another is extremely scanty. He remarks:—

"The limits of this paper will not permit a review of all of the theories put forward during the last fifty years to account for the origin of petroleum and other hydrocarbons in the crust of the earth. In fact it is questionable whether such a review is worth making except to show that the workers, both geologists and chemists, have been actively endeavouring to solve the problems but most hypotheses are mere speculations and while they are interesting no direct proof of their applicability has been adduced. As is well known there are two main groups of these hypotheses, one ascribing an organic origin and the other an inorganic origin to the oil. In most cases geologists have subscribed to the theory of organic origin but their reasons for so doing are generally the absence of evidence of igneous activity, and the great mass of sediments in oil fields. While in a measure these reasons satisfy the holders of the hypothesis, still many have looked in vain for unmistakable proofs that oil has been derived from animal or vegetable matter. Fortunately, there is one place in this country where it has been possible practically to solve the question of origin and since this is such a great exception and so important of itself the writer will be pardoned if he goes rather fully into a description of the conditions. The region in question is California and the conclusions given here are the results of the work of Messrs. Arnold, Anderson and Johnson, whose reports have already been quoted in reference to these fields. The studies of these geologists have shown that without much doubt foraminiferal and diatomaceous shale is the source of the California oil. In the fields on the west side of the Coast ranges the diatomaceous shale is carried in the Monterey (middle Miocene) shale and much the greater part of the oil in these fields occurs in that formation or in other formations which are in contact with or in close proximity to that formation. On the east side of the coast ranges in the San Joaquin Valley the Monterey is absent in some fields but other formations carry diatoms or foraminifera and in each case the oil is found only in these or closely associated formations. In the Santa Maria oil field, the largest on the west side of the Coast ranges, the Monterey shale, according to Arnold and Anderson, can be separated into two divisions each of which is about 2,600 feet thick. The lower division contains some diatomaceous layers but the upper division is mainly composed of such material. They describe it as follows:<sup>1</sup> "The infusorial earth, . . . of which the upper division of the Monterey is chiefly composed, . . . occurs in inexhaustible quantities. . . . The composition of the Monterey shale is of especial interest. One is able to see on examining the soft unaltered variety with a hand lens, or sometimes even with the naked eye, that it is full of small round dots ranging, to speak roughly, from 0.1 mm. to 1mm. in diameter. These are the skeletons of minute marine organisms called diatoms. They are a low order of plants or algae having a framework of silica. They are locally so closely packed together that they seem to form the bulk of the deposit. Aside from the diatoms the rocks of the Monterey contain remains of minute Foraminifera, which have calcareous frames, and Radiolaria, which secrete silica to form the tests." In regard to the origin of this field these authors say:<sup>2</sup> "There is no doubt that the petroleum in the Santa Maria district is indigenous to the Monterey shale. Bitumen is a characteristic part of that formation throughout its wide extent over an area covering hundreds of square miles, and there is no other formation but the Eocene shales in which it is characteristic, or in which it

occurs in appreciable quantity except locally, although there are numerous formations which would be capable of storing oil if any had originated in them. Moreover, the bituminous Monterey shale of the Coast ranges does not occur consistently above or below any one formation from which the oil could have been derived. It lies unconformably upon ancient metamorphic rocks; granite and other igneous rocks; Jurassic, Cretaceous, or early Tertiary sediments; or conformably over lower Miocene beds, according to local conditions; and it is either not covered by later deposits or is buried by sediments of various ages, in different places. The decision is therefore unavoidable that some ingredients of the Monterey shale gave rise to the oil. . . . The writers are strongly of the belief that the petroleum was derived largely from the minute organisms, especially the plant organisms (diatoms) which are present in such abundance in these shales.' They go on to say that there may be some question as to whether the oil was derived from the diatoms or from the foraminifera and radiolaria. In fact, there are several points strongly in favour of the animal origin, but these authors conclude with this statement:<sup>3</sup> 'The general conclusion is that in the Santa Maria district the organic material in the Monterey shale that may have acted as the source of the oil was without doubt adequate in amount for the production of the vast quantity of petroleum now present, and that the forms included in greatest abundance, the diatoms, were the chief source, although animals and perhaps other plants also contributed largely.' On the east side of the coast ranges the formations have different characteristics and consequently different formations are regarded as the source of the oil. In the McKittrick-Sunset region the Monterey and the overlying Santa Margarita formation bear diatoms and they are regarded as having been the original source of the oil, but there is some doubt about the identity of the Santa Margarita and it is possible that this may be found to be equivalent to the upper part of the Monterey shale in the Santa Maria field. It is significant in view of the conditions in the Coalinga field that in the McKittrick-Sunset region the Tejon (Eocene) and Knoxville-Chico (Cretaceous) formations are not diatomaceous and no evidence has been found pointing even in a general way to these formations as a source of oil or gas. The conclusions regarding conditions in these fields are as follows:<sup>4</sup> 'The organic matter in the Monterey shale is believed to be the source of at least a part of the oil in the McKittrick-Sunset region; its presence or that of the Santa Margarita (?) is therefore believed to be necessary for the accumulation of petroleum in this territory. Most of the hydrocarbon content has migrated to other formations, and entered the Vaqueros below or the McKittrick above, so that as a reservoir the Monterey is not important.' In the Coalinga field, farther north, the Monterey shale is absent and the Tejon and the upper part of the Knoxville-Chico are regarded as the source of the oil. Arnold and Anderson make the following statement concerning it:<sup>5</sup> 'The oils of the Coalinga district are believed to have been derived from two different sources, namely, the organic shales forming the uppermost member of the Chico (Upper Cretaceous) and those described as the upper portion of the Tejon (Eocene). It is believed that the oil originated from the organic matter, both vegetable and animal, once contained in these beds. The shales are composed in large part of the tests of foraminifers and diatoms, and a smaller number of other organisms, in such abundance as fully to warrant the assumption that the animal and vegetable material that must have been contained in them when deposited was adequate for furnishing a quantity of hydrocarbons and other compounds more than equivalent to the quantity of petroleum found in this field.' Although both shales have contributed to the supply of oil in the Coalinga field the Tejon is regarded by Arnold and Anderson as the more important:<sup>6</sup> ' . . . because the uppermost member of the

Cretaceous is limited to a small area in the northern part of the district we must look to some other source for the oil occurring in the Eocene and higher. Furthermore, the petroleum of the purple shale member of the Cretaceous is of a very different character from that obtained from the later beds. . . . The Cretaceous oil is greenish or brownish in colour, of light gravity, and contains paraffin, a high percentage of naphtha, and a very low percentage of asphaltum. The other oil of the district is distinctly an asphalt oil and is lacking in paraffin. It is therefore evident that there are two distinct oils in the Coalinga district, to which different ages and origins are to be ascribed. Thus it appears that the source of the oil is different in the different fields, depending upon the amount of diatomaceous and foraminiferal material in the formations. On the west side of the coast ranges the Monterey shale is the principal formation containing such material and it is the source of most of the oil. On the east side of the ranges the Monterey is the source of oil only where it is diatomaceous, but other formations partake of this character and, wherever they do, they also are regarded as the sources of some of the oil.

From this relationship between the diatom-bearing formations on the two sides of the coast ranges it seems to be apparent that these organisms were the ultimate sources of oil as claimed by Arnold, Anderson and Johnson. If it be granted that they have proven their case this will stand out as one region in which it has been possible to make a positive determination and these authors will have the distinction of being the first to do more than theorize regarding the organic origin of oil."

## REFERENCES.

- <sup>1</sup> *Op. cit.*, pp. 523-524.
- <sup>2</sup> "Geology and Oil Resources of the Santa Maria Oil District," Bull. U.S. Geol. Surv., No. 322, pp. 38-39, 1907.
- <sup>3</sup> *Op. cit.*, pp. 109-110.
- <sup>4</sup> *Op. cit.*, p. 113.
- <sup>5</sup> Arnold, Ralph and Johnson, Harry R., "Preliminary Report on the McKittrick Sunset Oil Region, California," Bull. U.S. Geol. Survey No. 406, 1910, p. 62.
- <sup>6</sup> "Geology and Oil Resources of the Coalinga District, California," Bull. U.S. Geol. Surv., No. 398, p. 188, 1910.
- <sup>7</sup> *Loc. cit.*

## THE PILGRIMS REST AND BARBERTON GOLD FIELDS.

### A Wave of Activity—Many Discoveries—Present Output at the Rate of Over a Million a Year—Likelihood of Early Expansion.

THE gold fields of the North Eastern Transvaal, although exploited long before the Witwatersrand was worked on anything approaching a large scale, have of recent years had to occupy a comparatively insignificant position in South African mining. We have held the opinion for years that were the Barberton and Pilgrims Rest Gold Fields situated in any country other than the Transvaal they would have risen to a much greater height of importance than they have occupied since first the golden glamour of the Rand began to absorb all South African interest and capital. Pilgrims Rest had 13 productive mines at work during last month, whilst in the Barberton District 14 mines were dropping stamps and the combined output of the two fields was worth £93,000, or only £10,000 less than the whole of Mashonaland in November. Of this amount Pilgrims Rest contributed £58,432, or more than any mining district outside of the Witwatersrand in South Africa with the exception of the Gwelo District in Matabeleland, half of which came from one mine, the Globe and Phoenix. Were the Pilgrims Rest and Barberton gold fields situated in Southern Rhodesia they most assuredly would have been proclaimed to the world at large as being amongst the leading mineralised areas on earth. As it is apart from the satisfactory and regular dividend announcements of the Transvaal Gold Mining Estates and Glynn's Lydenburg—the two leading properties of the Pilgrims Rest field—and recently of the Sheba and Worcester, near Barberton, the public at large seldom learns anything of these areas save the output declarations contained in the Chamber of Mines and Mines Department statistics.

#### SYSTEMATIC PROSPECTING.

Although there has been no fanfare of trumpets, steady and diligent work has been quietly going on in both fields for the past two or three years. It is perhaps worth placing on record that whilst the promise and achievement of the eastern and north-eastern gold fields of the Transvaal have been dwarfed by the magnificently spectacular records of the Main Reef series, it is in a large measure due to the Rand that both Pilgrims Rest and Barberton are coming to the fore again. Quite apart from the Transvaal Gold Mining Estates, the Glynn's Lydenburg, the Sheba and the Worcester, which are the largest mines (all of which are doing conspicuously well at present), it must be chronicled that the migration of numbers of practical men from all parts of "the Reef" to these outlying areas has had a most marked and beneficial effect. Both in the Lydenburg and Barberton fields there is abundant scope for hard working and experienced men possessed of a little capital. Mine captains, shift bosses and contractors who have accumulated modest savings on the Rand have found in the eastern portion of the Province a fruitful field for their capital and labour.

Prospecting is proceeding on more closely reasoned and systematic lines, the hand-to-mouth policy of feeding a mill has given way before businesslike development methods, and the consequence is that in both these fields there are numbers of small propositions, not a few of which already have attained to the profit-earning stage.

#### LATEST LYDENBURG DEVELOPMENTS.

To take the Pilgrims Rest field first of all, mention may be made of the fact that the proclamation of additional mining areas during the last two or three years has much extended the field of opportunities and discoveries. Sound prospecting work is being carried out over a very large tract of country and at few points are failures being recorded. The following facts regarding latest developments should give some idea of the general activity prevailing. The Xorcar syndicate at Graskop has been developing for a year and is preparing to mill on April 1st. Dr. Carl Peter's company, South-East Africa, Ltd., after two years' development, has closed the option secured on the Mali Dyke property and proposes to carry out further development. The R. Burham Syndicate is reported to have exhausted the rich section from which such excellent returns have been secured, but it is understood that another rich discovery was made in December. The Sunlight Mine has been hampered by shortage of water of late, but a suction gas plant has been installed to supplement the Pelton water wheel. The Mac Mac Syndicate, with five stamps at work, recorded an output of £1,275 last month, and the Little Octopus Syndicate working the "shale" reef also had a very good run. The Rex Gold Mine is reported to be starting up again. On the sandstone reef numerous prospectors, companies, and small syndicates are doing well, notably the Ceylon Lydenburg, Jolly Bright and Buchanan's. It is reported that at this latter mine a vertical reef from 6 to 8 feet wide and showing excellent values recently has been discovered. Another recent discovery has been made on the farm Dintje, beyond Vanlhoek.

#### DE KAAP

In the Barberton district a similar state of activity prevails. The Sheba appears to have entered on a new lease of life. A Johannesburg tributing syndicate is putting up a 10 stamp mill near Nelspruit. The Worcester and other mines are opening up satisfactorily, and numbers of prospectors are reported to be making important discoveries.

#### "AS YET IN THEIR INFANCY."

It seems then that both the Pilgrims Rest and Barberton fields are coming into their own again, and an early and considerable expansion of output seems probable. There are experienced mining men who have been acquainted with these districts for many years who believe that mining, both around Lydenburg and De Kaap, is as yet in its infancy.

## THE YEAR IN THE SHAREMARKET.

### Prices To-Day and Prices a Year Ago Contrasted—Improvement on the Rand Largely Negatived by External Depression.

THE salient features of mining operations in the Transvaal during last year having already been referred to in the columns of this journal, opportunity may be taken briefly to survey market conditions and to tabulate comparative prices as at the beginning of 1912 and at the commencement of the current year. The year just brought to a close was ushered in under circumstances that hardly could be described as propitious. With the memory of the East Rand Proprietary affair still freshly poignant in the minds of investors, the mining industry had to face 1912 with a severe handicap. The mines have, however, nobly responded to the call for better results and, as has previously been stated, both the outputs and dividends recorded distinct advances on the previous year's showing. An examination of share market prices prevailing to-day and twelve months ago discloses, however, a state of affairs which it must frankly be admitted gives little cause for elation. In fact, the result is disappointing. There have, of course, been advances in the prices of some stocks and declines in others, according to the varying fortunes of the properties concerned. Amongst the new dividend payers, such as the Modder B, Brakpan and City Deep, a substantial rise in prices is noticeable, but on the other hand, in the cases of mines which are approaching the end of their lives, like the Village Main Reef, and of companies which for reasons of policy have passed their dividends—the Knight Central, for example—declines are to be observed. Political complications in Europe have assisted in depressing a sensitive market, and apparently the advantages gained by the industry during the past year, notably in securing an amalgamated recruiting organisation instead of a number of competitive and disjointed labour-procuring units, have been counterbalanced by developments over which the industry has no control—wars and rumours of wars, and industrial strife in Europe. The lists printed below, which, although not including all stocks and shares, may be regarded as being representative of market conditions, show that on the whole there has been little real movement either upwards or downwards in so far as Rand and outside district gold stocks and financial institutions, etc., are concerned. The maintenance of high prices for tin and diamonds shows itself in the case of the Premier, Roberts Victor and Rooiberg Companies. The collieries have had a satisfactory year and the improved prices recorded in respect of the three concerns cited hereunder may be taken as being typical of the improved state of affairs prevailing in the coal industry. The schedules which contrast prices and also state the dividends paid by the companies concerned during the year will be found below classified according to Rand and outside districts gold mines, financial corporations, etc., tin, diamond and coal companies.

RAND GOLD STOCKS.					
	Middle Jan. 1913.	Middle Jan. 1912.	Rise or Fall s. d.	Dividend Paid 1912	
Aurora West ... ..	10 0B	7 6B	+ 2 6	—	
Apex Mines ... ..	28 6	33 6B	- 5 0	—	
Bantjes Consolidated	23 3B	23 3B	—	2 3	
Benoni ... ..	4 0B	10 0	- 6 0	—	
Brakpan Mines ... ..	81 0B	51 0B	+ 30 0	8 0	
City and Suburban...	41 6	46 6	- 5 0	*12 0	
City Deep... ..	59 6	50 9B	+ 8 9	2 6	
Cloverfield ... ..	7 0	4 0B	+ 3 0	—	
Cons. Langlaagte ... ..	28 6B	17 0B	+ 11 6	—	
Cons. Main Reef ... ..	18 9	16 0	+ 2 9	2 0	
Cinderella Cons. ... ..	22 6B	30 0	- 7 6	—	
Crown Mines ... ..	140 0B	130 0B	+ 10 0	11 0	
East Rand Props. ... ..	57 0	67 0	- 10 0	5 0	
Government Areas ... ..	20 3B	21 6	- 1 3	—	
Jupiter ... ..	11 9B	8 0B	+ 3 9	1 0	
Knight Central ... ..	12 6B	15 0B	- 2 6	—	
Main Reef West ... ..	18 0B	26 6B	- 8 6	2 6	
Modder B ... ..	69 6B	52 9	+ 16 9	4 0	
New Kleinfontein ... ..	22 3	28 0	- 5 9	2 6	
New Rietfontein ... ..	7 0B	11 9	- 4 9	1 6	
New Unified ... ..	15 0	18 0B	- 3 0	4 0	
Robinson Deep ... ..	45 0	56 0	- 11 0	5 6	
Rand Klip ... ..	4 6B	4 0B	+ 0 6	—	
Simmer Deep ... ..	2 6B	4 0	- 1 6	—	
Springs Mines ... ..	16 0	10 0s	+ 6 0	—	
Van Ryn Deep... ..	21 6	7 9	+ 13 9	—	
Village Deep ... ..	41 0	42 6B	- 1 6	3 6	
Village Main Reef ... ..	44 0B	65 0B	- 21 0	14 0	
Wolhuter ... ..	18 0	22 6B	- 4 6	*14 0	
Wit. Deep ... ..	51 0B	52 6B	- 1 6	2 6	
West Rand Cons. ... ..	15 6B	10 6	+ 5 0	—	
FINANCIAL CORPORATIONS, ETC.					
African Farms ... ..	17 0B	16 9	+ 0 3	—	
General Mining ... ..	21 0B	20 0B	+ 1 0	—	
New Era ... ..	7 9B	5 6B	+ 2 3	—	
Randfontein Estates	30 6	33 0	- 2 6	1 0	
OUTSIDE DISTRICT GOLD MINES.					
Nigel ... ..	19 0	19 6B	- 0 6	1 0	
Transvaal G.M.E. ... ..	52 6	45 0B	+ 7 6	6 0	
TIN STOCKS.					
Rooiberg Minerals ... ..	31 9B	26 6B	+ 5 3	4 6	
Swazi Tins ... ..	28 0B	32 6B	- 4 6	1 0	
Zaaiplaats ... ..	34 3B	76 0	- 41 9	5 0	
DIAMOND STOCKS.					
Premiers Def. ... ..	245 0	202 6	+ 42 6	16 3	
Roberts Victor... ..	45 0	20 6	+ 24 6	—	
COLLIERY STOCKS.					
Glencoe Collieries ... ..	6 9B	6 0B	+ 0 9	—	
Transvaal Coal Trust	47 0s	33 9B	+ 13 3	4 0	
Witbank Collieries ... ..	45 0B	42 0B	+ 3 0	6 0	

\* Per £4 share. † Per £5 share.  
B = Buyers. s = Sellers.

### 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.

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.

### Nissen Stamp.

To the Editor, *South African Mining Journal*.

Sir,—It is noteworthy the popularity of the Nissen stamp in Rhodesia, all of which is no doubt the outcome of the successful tests made on this stamp at the City Deep mine. When P. W. Nissen, the inventor of this stamp, read his interesting paper before the Chemical, Metallurgical and Mining Society he estimated a saving by the adoption of Nissen stamps in place of Californian stamps (5 head one mortar box type) of 1·31 pence per ton of ore crushed. This saving was made up principally from the tests referred to showing that 30 per cent. less horse power was consumed by Nissen stamps compared with Californian stamps. This estimate is a conservative one. In your last issue you show the Shamva mine as erecting 52 Nissen stamps to crush 40,000 to 50,000 tons of ore per month. You must have omitted the secondary crushing plant, as this tonnage, say 40,000 tons per month, is equivalent to a stamp duty of between 26 and 27 tons per stamp per day. Without some sort of secondary crushing appliances this stamp duty seems impossible.—I am, etc.,

G. A. ROBERTSON.

Germiston, 20th January, 1913.

[We are unaware what the nature of the Shamva's secondary grinding plant will be, but in all probability tube mills will be installed, in accordance with latest Rhodesian practice.—Ed., *S.A.M.J.*]

### Rhodesian Mining To-Day.

To the Editor, *South African Mining Journal*.

Sir,—As a one-time Johannesburger and present-day Rhodesian, I should like to offer a few comments on the pessimistic opinions with regard to this country that have appeared in your journal of late. First, as regards the mining industry: This at present is in a sounder state than before, the value of the combined ore reserves of the larger mines is equal to over three years of the total Rhodesian output at the present rate of production, while the sums authorised to be spent on construction during 1913 are at least twice as great as in any previous year in the history of the country. The small workers, although not increasing in numbers, are holding their own, and quite a number of promising prospects were unearthed in 1912, some of which may develop into big mines. The drought which has been general throughout South Africa has had far less disastrous effects in Rhodesia than in the Union. In Mashonaland, in fact, farmers have been, and are continuing to do extraordinarily well. The railway receipts during 1912 compare not unfavourably with those of 1911, which was admittedly a boom year in the country. The value of land has materially increased during the last twelve months and if a prospector or small mine owner has a property of genuine prospective value, he can get a fair price for it, not as high as he might have obtained two years ago but higher than a similar prospect would fetch in any other part of the world. It was the Rand man himself, in the main, who induced the recent wild scramble after mining claims and its resultant inflation of prices. Mining on the Rand and prospecting in Rhodesia are two very different jobs, and because a man is an efficient mine manager or shift boss on the Rand, it does not follow that he can appraise the value of a Rhodesian quartz mining prospect. Rhodesians like to see Rand men come up here, and like to see them do well, but far too many come up too full of self-confidence while quite ignorant of local conditions. They lost money in most instances, and so blame the country instead of blaming themselves. All mining prospects cannot turn out winners—and under the most favourable conditions the majority must be disappointed. If good mines were easily found, they would not

be so valuable. The remarks about the unhealthiness of the climate are gross exaggerations. If a man in normal health takes reasonable care of himself, lives well, and goes gently with the whisky bottle, he can keep his health here as well as almost any part of Africa. The speculative section of the community has undoubtedly had a bad time of late, but the genuine worker, be he miner, farmer or merchant, has nothing seriously to complain about. The commercial, and to a lesser extent, the administrative policy of the B.S.A. Company has admittedly not been such as to hasten the progress of the country as rapidly as could be desired, but it is to be hoped that this will in the near future be radically altered.—I am, etc.,

B. I. COLLINGS.

### More Geological Truth Tablets.

To the Editor, *South African Mining Journal*.

Sir,—Your interesting article on the life of the Van Ryn, together with the plan, in your last issue, should give thinking men in the mining business something to think about; for, apart from fifty other dissimilarities, your word section of its "so-called Main Reef," and its many overlying leaders, and South South Reef series, 250 yards away—not feet, as here—should be clear evidence to the open-minded geologist, if such exists, that it does not correspond to a Main Reef section of the Central Rand, or any other Rand, where our Witwatersrand age is exposed. Their South Reef series, as they term it, is the rich Chimes series of ancient memory, which is not to be found anywhere on the Central Rand, south of "the" reef of Johannesburg; but New Kleinfontein and Benoni have it, and Nigel G.M. Co. has it, if that conservative company cares to work it to prolong its life, as the Van Ryn is doing to great advantage to present shareholders. Van Ryn series is quite able to take care of itself without coming under the wing of the Main Reef series continually. It contains twice as many pebble beds, and its ore is of equal value with the best on the Rand, as far as I know, and claim for claim the tonnage is practically double. For a perfect section of this most important series see Langemanns Kop, in the Bezuidenhout Valley, with leaders, Chimes and all! To try and correlate Modder "B" or "Geduld," for instance, with the Van Ryn series is simply ridiculous, as they are parts of different geological ages to start with, as a blind man can tell by the smell. The series are separate and distinct, and they can no more be linked up in the way some clever geologists have attempted, than fly. To carry Main Reef series up on to Klipfontein as they have done is "the limit!" Yet other fellows look on and say "Ja! Muehli!" If the Cyverfontein Syndicate down at Klerksdorp had been a success instead of a failure, through lack of stratigraphical knowledge, it would have taught the Rand whether the Van Ryn series is simply a local occurrence, a chick of Main Reef, or what not. It is lucky for those who have a monopoly of the series at present—the companies mentioned—that Rand geologists have not sufficient perspicacity to find any more, otherwise it would make the brand too common, and flood the market with yellow metal. If Main Reef series is on Grey's Mynpacht, as Dr. Mellor says, then the Van Ryn must underlie it but your humble servant makes the same out to be Black Reef series, and none other as Nature says! There is nothing to be ashamed of in Black Reef series, as quite a number of big companies on the Rand are working it; some crush one reef only—viz., the Black Reef—others tackle several reefs, and make them pay.—I am, etc.,

SCOTT ALEXANDER,

"Rand Stratigraphist"

Johannesburg, January 21st, 1913



# Rhodesian Section.

## LATEST MINING NEWS.

### Survey of Mining Locations—The Acorn's Equipment—Bulawayo Syndicate—Rhodesian Copper Deposits—Empress-Palmeira—Heavy Rainfall at the Shamva—A Rezende Dividend—Sinti Reefs—Susanna Mines—The Montezuma.

ANYONE who has travelled through the outlying mining districts of Rhodesia must have been struck by the careless manner in which claims have been pegged and must have observed that in some cases areas marked off have apparently overlapped. The Government survey of mining locations by recently-appointed Beacon Inspectors has disclosed the fact that in numerous cases mining locations have been pegged exceeding the area allowed by law to such an extent as to support the conclusion that the excess pegging must have been done deliberately, and with such a reckless disregard of the extent of ground pegged as to amount to wilful excess pegging. Official notice has therefore been given that the measurement of a mining location, as prescribed by law, must be strictly adhered to, and any person pegging a larger location than that authorised by his prospecting licence renders himself liable to prosecution under section 145 of the "Mines and Minerals Ordinance, 1903," and the registration of the location so pegged may be refused.

\* \* \* \*

Development work has been started up on the Mayflower under the general management of Mr. R. H. Ullyett, of the Acorn mine, with Mr. G. Munro, late of the Duke mine, in charge of operations. A long strike has been proved at surface, and it is anticipated that development at depth will show good results. The reduction plant at the Acorn is now completed. It consists of a 5-stamp Sandycroft mill with crusher and self feeder, etc.; spitzkatzen, Wilfley concentrator, cyanide plant, concentrate treatment tanks, etc. A considerable drop in the output was unavoidable for the month of December, owing to the mine being closed down the greater part of the month while more powerful hauling gear was being installed and a heavy 24 in. gauge track laid down the whole depth of the shaft. However, from now onwards a good average grade output is anticipated.

\* \* \* \*

Presiding at a meeting of the Bulawayo Syndicate, Ltd., in London in mail week, Mr. R. A. Stephenson pointed out that in view of the general improved position in Rhodesia, the assets, standing in the balance sheet at £51,000, were worth much more than the book figure. The revenue from the Rhodesia farm and land holdings has increased from £1,683 to £2,625, which is a very promising augmentation, especially as no great progress in agricultural settlement has taken place during the year. There has been a somewhat better enquiry for land, and it is encouraging to note a considerable appreciation of land in other parts of South Africa. Some small farms in Rhodesia have been sold, and although these particular areas were not considered of much value, the price obtained has been well in excess of the average value at which the land stands in the company's books.

\* \* \* \*

Writing of Rhodesian copper deposits, Mr. F. P. Menne'l remarks in the *Rhodesian Mining Review*:—Of the deposits among the ordinary schists, the Skipper mine is the most important that has so far been opened up. It is about 18 miles from the Globe and Phoenix, close to the Sinanombi road, and the country consists of the ancient volcanic rocks

that appear to overlie the conglomerate series. They are very much crushed and sheared at this locality. The ore body is an extremely altered and rather irregular rock mass running roughly north and south. I was at first inclined to regard it as decomposed serpentine, but it is perhaps simply a peculiar band of the metamorphosed volcanics. The ancient workings are extensive, and the whole surface of the kopje on which they are located has been scratched over, so that none of the original outcrop remains. A peculiarity of them is that they do not usually indicate the best ore. They evidently followed patches of oxides and carbonates, and, as it happens, the highest values even close to the surface are contained in copper glance, which is disseminated in nodules and specks through the rock. The "ancients" were obviously unable to smelt sulphides, hence their disregard of this class of rock. The ore is low grade, but it forms a body of great size, averaging no less than 90 feet wide in the oxidised zone. The sulphide ore below splits into two narrower bodies, and consists of a mixture of copper glance and iron pyrites in a matrix of schist. There are small gold and silver values in places, especially near the surface.

\* \* \* \*

The bulk of the machinery recently ordered to effect a duplication of the existing compressor and power haulage plant has now arrived on the Empress-Palmeira mine (owned by the S.A. Prospecting and Concessions Syndicate), and the balance—light parts, fittings, etc.—is now close at hand. All possible sources for delay through flooded rivers have therefore, so far as can be seen, now been avoided. The concrete foundations for the two new boilers, compressor, driving engine, and hoist were prepared in advance and the last-mentioned is already in position for use. The erection of the rest of the plant will proceed with all possible speed as indicated by cable recently sent to the London office of the company. The mine continues to look well at all working faces in or on the east or west lodes.

\* \* \* \*

A Shamva correspondent reports that the rainfall there has been abnormal. The Poti river, he says, rose about 20 feet in a few hours, and some of the low-lying lands were two feet under water, quite a lot of planted mealies being washed away. On the 3rd inst. a particularly heavy thunderstorm broke over the Ibex mine in the district. So sudden and tremendous was the downfall that the boys on night shift had to rush for safety, and soon the mine was flooded. Part of the dump was washed away and the whole top of the hill scored with water furrows.

\* \* \* \*

The Rezende Mines, Ltd., has declared an interim dividend of 1s. 6d. per share, less income tax, for the year ended December 31st, 1912, on the 118,435 shares of the company. It becomes payable on the 22nd inst. This distribution marks the entry of the company into the list of dividend-paying Rhodesian mines.

\* \* \* \*

The directors of the Sinti Reefs, Ltd., report for the period to September 30 last that work was carried out upon

the Chokeford claims for some time, under the supervision of Mr. Dudley J. Inskipp, of Bulawayo, but the developments did not warrant the option to purchase being exercised, and accordingly it was abandoned. On the recommendation of the company's engineer an option was secured on two blocks of 10 claims each, known as the Umvoti claims, situated in the Filabusi district, Southern Rhodesia, but the option to purchase was not exercised. With regard to the original claims, no improvement being met with in the developments, work was suspended thereon in the early part of 1911. An offer was made to the shareholders in July, 1911, of taking up new shares of the company at par, but as the response was insufficient, the directors returned the money subscribed. The only course therefore open to the directors is to wait for an improvement in the mining markets, when, if the reserve capital of the company can be placed, they are confident there will be ample opportunities of doing good business in Rhodesia, or other mining centres.

\* \* \* \*

The following official details of developments on the Susanna Mines are published:—Susanna mine: The reef in the north winze at 85 ft. from the 10th level is 40 ins. wide, and pans 15 dwts. The reef in the spur reef winze averages about 12 ins., and pans 10 dwts. Lady Lina: The two drives on the third level are looking well, and the reef maintains its width.

\* \* \* \*

The following cablegram giving details of development on the Montezuma was recently despatched to the London Board of the London and Rhodesian Mining and Land Co.: Have just returned from the mine; have begun work at 100 ft. level, east drive extended 4 ft., a total of 211 ft., reef 40 ins. wide assaying 9½ dwts. per ton; 200 ft. level east drive extended 4 ft., a total of 33 ft., reef 42 ins. wide assaying 19.6 dwts. per ton.

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## AMALGAMATED PROPERTIES OF RHODESIA.

The third annual ordinary general meeting of shareholders of the Amalgamated Properties of Rhodesia, Limited, was held on January 3rd, at Salisbury House, London Wall, E.C., Mr. G. R. Bonnard, the chairman and managing director of the company, presiding.

The Chairman said:—The balance-sheet will show you that there has been no change in the authorised capital of the company, which remains at £1,500,000, divided into 6,000,000 shares of 5s. each. There have been issued since the last balance-sheet 1,083,580 shares in respect of assets acquired under contracts of purchase set out in the directors' report of last year, and dealt with by me fully and in detail at the general meeting held on January 25, 1912. Of the shares thus issued, 125,050 have been surrendered in connection with the cancellation of two contracts of purchase, particularised by me at the last meeting, and with regard to these an application to the court will be made for the confirmation of their cancellation. On this being completed your issued capital will stand at £946,226 in 3,794,904 shares of 5s. each. I wish to clearly state that no shares whatever have been issued beyond those liable to be issued as previously mentioned. A sum of £5,281 0s. 3d. as a "reserve for expenses in connection with assets acquired by the company at its inception," and representing a provision for possible expenses and bad debts, are closed up. A reserve of £20,000 we have deemed it advisable to set up in connection with the purchase of the London Zambesia Syndicate's assets. "Bills payable, £2,000," represents the customary running acceptances from South Africa, and "Loans, £119,118 1s. 7d.," is the amount of the company's borrowings on security. "Sundry creditors and credit balances, London and South Africa, £1,805 15s. 10d.," is the amount due to creditors and open balances at September 30, when the books were closed; some of these have since been discharged and the remainder will be discharged in due course. With reference to "Contingent liabilities," they are, so far as "uncalled capital on shareholders" is concerned, a negligible quantity, amounting to a little over £1,000; claims to certain estates in Rhodesia, against whom neighbouring claim owners alleged encroachment, and claimed a sum of £7,500 as damages. Your company has, of course, made no encroachment, but as registered owner of the ground leased on tribute it has been joined as co-defendant with the tributors. The case has been before the High Court in South Africa, and, at our instance, a postponement has been granted to enable us to obtain the evidence of a mining

engineer who in another part of Africa, who, we are informed, is in a position to refute the plaintiff's allegations. The case being still *sub judice* you will understand I cannot enter into further details. On the credit side the item £87,012 9s. 1d. added as "cost of properties purchased and expenditure during period to date," represents the price paid by the issue of fully-paid shares for 1,037 Deep Level mining claims on the Rand, to which you will remember I referred at length at the last meeting. The next item—"less cost of properties sold during the period to date, £67,497 17s. 7d."—explains itself, and leaves the company's property and assets, consisting of its mines, mining claims, estates in Rhodesia, Transvaal, and Bechuanaland, as particularised and scheduled in the directors' report, at a total of £138,269 12s. 2d. "London-Zambesia Syndicate purchase account, £19,020 14s. 3d.," is in respect of the contract for which special reserve of £20,000 has been made, and to which I have already referred. Turning to the profit and loss account, I desire to point out to you that it covers a period of fifteen months. The first item—"London expenditure, £12,934 14s. 1d.,"—comprises every possible kind of expenditure in connection with the working of the company in London, and of this amount no less a sum than £5,286 10s. 8d. is in respect of interest on loans and legal expenses; the directors' and managing director's fees amount of £2,385 8s. 3d.; rent and salaries, £1,821 18s. 2d., and the balance is made up of cables, postages, stationery, printing, etc., and general expenses. To my mind some of these expenses are heavy, and you may rely upon the board doing its utmost to substantially reduce them. "South African expenditure, Johannesburg and Bulawayo, £1,306 13s. 10d.," includes the whole of the administrative and executive expenditure in South Africa, and is not excessive, seeing the variety of interests your company possesses and the extreme importance that they should be well looked after. The last item—"expenditure re liquidation of amalgamated companies, £2,771 12s. 5d.," represents liquidation fees and expenses, etc., in connection with the assets of companies which this company was formed to acquire. This expense should shortly disappear altogether. In regard to land in Rhodesia, you have already been informed that your company owns sixty-six farms, having an area of 1,239,257 acres, and a half interest in four other farms of 298,430 acres. Three of the before-mentioned sixty-six farms, comprising an area of 144,092 acres, have been sold to the Rhodesian Cattle and Land

Company, Limited, for £32,420, payable in fully paid shares of that company, this price representing a figure of £5,356 over and above the valuation placed by Mr. Stewart Richardson on such farms. We have also subscribed for £15,000 working capital shares in this company at par. The sale of three of our farms to the Rhodesian Cattle and Land Company, Limited, and our subscription for working capital shares means that we hold three-fifths of the total issued capital of that company, and that we have not waited to start ranching operations on our own account, but we have linked up three of our farms under the before-mentioned terms with an existing ranching company already owning property second to none in the whole of Rhodesia. We also hold, with the Transvaal and Rhodesian Estates, Limited, a half-interest in four farms situated in the Gwanda and Tuli districts, comprising an area of 298,130 acres, very near the three before-mentioned farms, and instructions have been given to commence ranching operations thereon on joint account. Three of these farms, approximating 140,000 acres, are near to the northern boundary, and the fourth farm, consisting of some 158,000 acres, is close to the southern boundary of the big ranch owned by the celebrated firm of Liebig and Company. These farms have been most carefully examined and reported upon by Mr. Stewart Richardson, one of the most capable agricultural experts in Rhodesia. His examination has been far-reaching, and his reports enter very closely into the possibilities of these estates, not only with regard to ranching, but for mixed agriculture generally. He informs us that on the three farms north of the Liebig Company's estate the natives have small mobs of cattle, all of which are in a most healthy condition. This clearly shows that the country in this area is eminently suitable for ranching purposes. The natives pay a small rent for occupation rights. We do not propose to drive them off our ground, but, on the contrary, to encourage them in the rearing of cattle, which, with the object we have in view, is all-important to us. Cattle disease has not been known in this district—it is clean in every respect. The railway passes through one of the estates, and closely borders on the western boundary of the other two, whilst the township of Gwanda is situated only some five miles away. This block of ground of nearly 300,000 acres is well watered; the main river—the Tuli—runs as near as possible through the centre of the northern portion of the property, and is fed by tributaries east and west of it, whilst the Umzingwane River passes through the N.W. section of the southern estate, and is fed by subsidiary streams running into it from the west. There is also a large amount of timber of a useful character upon these properties. In addition to having examined and reported upon the foregoing farms in the Gwanda and Tuli districts, Mr. Stewart Richardson has also examined and reported upon other of our farms in the Bulawayo, Gwanda, Makoni, Salisbury, Umtali, and Mangweni districts, comprising a further area of 627,144 acres, bringing the total acreage of your company's estates in Southern Rhodesia reported upon by him to 1,069,666 acres, which he values at £130,815 0s. 7d. in excess of the figure at which they stood in your company's books, and expresses the opinion that their value will still further increase with the development of Rhodesia. The remaining estates owned by the company, consisting of over half a million acres, will be reported upon by Mr. Stewart Richardson at the earliest possible moment, and as soon as his work has been completed we shall have at your disposal full reports on all our land interests in Rhodesia. The reports will form a valuable volume of well-considered and thoughtful data, and will enable your board to deal intelligently with this most important asset.

### Selukwe Columbia.

Selukwe Columbia developments have made it advisable to add to the mining area by the acquisition of some further reef bearing claims. Options have since been exercised in the case of the Wonderland and Chimborazo blocks, on which exploratory work to date has revealed reef of good value. The acquisition of these properties, payment for which will be made partly in cash and partly in shares, will necessitate the issue of further capital, and in accordance it is proposed to increase the capital to the extent of a further £25,000. Of the 100,000 shares proposed to be created, 35,000 will be allotted to the vendors of the Wonderland and Chimborazo claims, in addition to £10,225 cash, whilst it is necessary to be in a position to allot a further 20,000 shares which, together with £5,000 cash, will be the price of the Danga claims should that option be exercised. The balance of 45,000 shares will be held in reserve. The result of the year's work to June 30 shows a profit of £6,410. Provision for depreciation of machinery, plant, buildings, etc., absorbed a sum of £5,013, leaving a balance of £1,397, which, added to the credit balance brought forward from last year, viz., £3,561, gives an available balance of £4,959, which it is proposed to carry forward.

Turning now to the farm, "Woollandale," having an area of 37,549 acres, we are advised that this estate occupies what is probably the best position in the whole of Southern Rhodesia. It is traversed by the Cape-Bulawayo main line for its entire width. The Khami Railway siding lies in the Government outspan comprised in the 3,000 acre farm cut out of the centre of the estate. It is surrounded on all sides by well-known and developed estates, and is most easy of access both by rail and road. Mr. Stewart Richardson reports that the estate is probably the best watered within a fifteen-mile radius of Bulawayo, and, after recommending its division into ten good-sized farms, he concludes by placing on it a value of £30,000—a sum more than £20,000 in excess of the figure at which this property stood in the books of your company. Turning to our mining properties and interests in Rhodesia, as the report informs you, Mr. Arthur Dickinson, a well-known consulting mining engineer—and also one of your directors, who joined the board at my initiation—proceeded to Rhodesia in the spring of 1912 for the purpose of examining and reporting upon them. The first property examined by him was the Champion Mine and other claims adjoining it, situated in the Umtali district. He was not at all favourably impressed with the outlook, and reported that the oxidised ore developed in the upper levels was of a refractory character. As a consequence, Mr. Dickinson has advised that the outlook in connection with this property does not offer any inducement for further expenditure on its development, and the only thing to be done is to treat the ore bodies disclosed in the oxidised zone if they can be treated at a profit, and to this end he has made arrangements for a trial crushing of approximately 200 tons of ore at a neighbouring battery. We have, therefore, written off from this mining interest a sum of £30,000, leaving it in our books at a merely nominal cost.

Turning to our 40 per cent. interest in the Ceylon Mine, development work up to the time of Mr. Dickinson's visit to it showed that the gold lay in two short chutes in irregular formations, and that the ore was of a refractory character. The views held by the engineers of the chief partners were that the mine should be let on tribute. Mr. Dickinson was adverse to this, and recommended further work being done to the west from the second chute, and the sinking of further winzes from the lower level on the first chute. This work is now being undertaken, and we can only await results. We have written off from this mining interest a sum of approximately £10,000, leaving it in your books also at a nominal figure. Personally, I hope, and, in fact, I believe, that continued development here may be favourable. Your mining claims in various districts are 2,343 in number, some of which Mr. Dickinson has advised your company to be worth retention for further exploratory and development work; others he has recommended us to abandon, and the balance he has yet to examine. In respect of those already abandoned we have written off the sum of £12,610 9s. Your total number of mining claims in Rhodesia now stands in your books at the sum of £27,020 16s.—an amount which I venture to think you will in the future find to be in no way excessive. Since the period dealt with by the report, your company has acquired on favourable terms a half interest in about 300 claims adjoining, or in close proximity to the Turkois Mine, in the Hartlev District, owned and now being developed by the Gold Fields Rhodesian Development Company, Limited.

In conclusion, the Chairman moved the adoption of the report and accounts.

Mr. H. B. Jameson seconded the resolution, which, after some congratulatory remarks from shareholders, was carried unanimously.

### Rhodesia Broken Hill.

Beyond the necessary repairs to timbers in the workings and the getting out of 55 tons of ore from No. 1 kopje for experimental treatment, no development work has been done during the period ending August 31 by the Rhodesia Broken Hill Development Co. At No. 1 kopje the engineers estimate that there are about 140,000 tons of ore, and that every 50 ft. of sinking may be expected to develop about 250,000 tons. The average assay value of the ore already exposed is 26.08 per cent. lead and 22.27 per cent. zinc. At No. 2 kopje the estimate is that from 300,000 to 320,000 tons of ore are exposed, and that the average assay value may be expected to be about 32 per cent. zinc. The greatest difficulty has been encountered in endeavouring to secure a recovery of the zinc values of the ores by any method which would leave an adequate return with an average metal price. So far it has been found impossible to obtain a recovery of these values in the form of a concentrate which could be profitably exported under the existing railway tariff and other transport charges. The Board are at present confining their attention to proposals for the recovery of the lead values from the lead-zinc ores.

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## TRANSVAAL AND RHODESIAN ESTATES.

### Mineral and Agricultural Developments and Prospects.

The first ordinary general meeting of the Transvaal and Rhodesian Estates, Ltd., was held on Tuesday, 31st December, at Salisbury House, London Wall, E.C., Mr. G. R. Bonnard (Chairman and Managing Director) presiding. The Secretary (Mr. F. W. Webb) having read the notice convening the meeting and the auditors' report, the Chairman said: This company was formed principally for the purpose of acquiring the assets and undertaking of the British and Colonial Investments, Ltd., the Salisbury (Rhodesia) Estates, Ltd., and the Bulawayo Market and Offices Company, Ltd., for the purchase consideration of 2,100,530 fully-paid shares in the capital of your company. It may, therefore, be taken for granted that the larger number of our shareholders to-day were shareholders in these three companies, approving the sale of the foregoing assets and undertakings to this company. Other interests were acquired, including stands, buildings, land and mining interests in Rhodesia, for a further consideration of 570,000 fully-paid shares. It is usual for the Chairman to explain in some detail the different items embraced in the balance sheet of a company when it is submitted for the approval of its shareholders at a general meeting. There is, however, nothing in our balance sheet which calls for any special comment, but I will draw your attention on the debit side to sundry creditors. These are made up of "London, £1,563 16s. 9d." This amount represents some twelve different items, and calls for no remark. "Creditors in Johannesburg, £5,249 11s. 3d." consist in the main of expenses incurred in connection with our rebuilding operations in that city. These have since been paid. The balance is made up of £253 0s. 3d., sundry creditors in Rhodesia. Profit and loss, balance as per account for period to date, £14,245 19s. 8d., is clearly set out in the accompanying profit and loss account. Turning to the credit side, stands and buildings in Johannesburg, Bulawayo, Salisbury, Gwelo, Umtali, Victoria, etc., figure at £127,841 9s. 7d. This amount is well below the value of these assets, and will, we believe, show a considerable increase in the future. "Farms in Rhodesia, Transvaal and Delagoa Bay, £51,955 6s. 7d." the same remark applies to these as to our stands and buildings. "Claims, mining and other interests, £64,462 3s. 6d.," is the total figure at which all your mining interests stand in the books of the company, and I venture to assert that during the current year we shall be able to clearly demonstrate that this figure is very considerably below their real value. "Preliminary expenses, £1,394 5s. 1d.," covers registration and other expenses incidental to the formation of this company, and will be written off over a period. "Sundry debtors, London and South Africa, £8,077 12s. 11d." A large portion of this amount has been paid off, and the balance is quite good. "Investments at cost" stand thus: Quoted £39,726 10s. 7d., unquoted £76,671 13s. 8d., totalling £116,398 4s. 3d. As mentioned in the report, the market price of the quoted investments as at the 30th September shows an appreciation over the book value of £3,964 9s. 5d. These investments comprise about a dozen items, and are readily realisable. The unquoted shares chiefly represent the company's holdings in English land companies, of which we hold all the capital, the Willsgrove Estate, referred to in the report, the Beira Town Sites and Rand Deep Level Mining Companies. The value of these several interests, I am sure, is largely in excess of the figure at which they stand in our books. "Loans on security, £53,259 16s. 4d.," are well secured and carry remunerative interest. "Cash, £25,421 0s. 10d.," speaks for itself.

#### PROFIT AND LOSS ACCOUNT.

In regard to the profit and loss account, there is only one side of this account which I think calls for any explanation. London expenditure, £9,132 6s. 1d., represents the total expenditure in London for practically one and a quarter years, and embraces the different items set opposite the figures. The amounts in respect of a number of these items have been abnormally heavy owing to their covering extra expenses, which have always to be encountered during the first year or so of the working of a new company. Expenditure on mining properties abandoned, £360 12s. 9d., requires no explanation. Liquidation expenses of absorbed companies, £1,550 9s. 4d.—this represents the amount which your company had to pay in connection with the expenses of liquidation of those companies whose assets and undertakings were purchased, an expense which will not recur. Now, turning to the directors' report, it is quite evident by the very large number of proxies received that this has met with the approval of the shareholders as a body. (Hear, hear) Let me at once state that, in my opinion, it deserves to be so met. It is not unusual for directors to think that they are better likely to please shareholders by putting the best possible aspect in their report upon the assets which have a promising outlook, and minimising difficulties and unpromising possibilities with regard to others. This is not the course your directors have followed. I have no hesitation in stating that, in my opinion, not one of the group of assets appearing on the credit side of the balance sheet is over-estimated with regard to its value; on the contrary, I believe each group will prove to be of much greater value. Let me now draw your attention to some of our more important interests. Before doing so, however, I would like to point out that the period covered by the accounts has been a period of considerable anxiety and depression in connection with South African matters. The position was intensified by our changing the management of our interests in these parts and placing it directly under our control, with our own officers and staff directly responsible

to us for their management and work, hitherto carried out by other companies acting as our agents. I do not wish to cast any reflection upon the officers of companies who in the past acted as our agents in connection with these interests, but the fact remains that your directors considered it expedient to alter this system of representation, and it will not be difficult for you to appreciate the fact that such an alteration involved a great amount of inconvenience, considerably interfering not only with our programme of development, but also causing a temporary loss of revenue. Mr. H. A. de Beer, referred to in the directors' report, is now in charge of the management of your affairs in South Africa, and we believe that his wide experience and untiring industry will prove to be of great benefit. We look not only for a steady and pronounced appreciation in the revenue to be derived from our stands and buildings in Johannesburg by reason of the work already completed, but a still further marked increase of profits as a certain result of carrying out the policy outlined in the directors' report.

#### RHODESIAN ASSETS.

Turning to Rhodesia, without doubt our main asset there consists of our holding of 500 stands, representing nearly one-fourth of the City of Salisbury, and let me inform you that the more important part of this holding is located in the very best part of the city. I do not think it possible for me to give you a better demonstration of this fact than by telling you that the last municipal valuation of the whole of the City of Salisbury showed an increase of about 22 per cent. over and above the previous one; but with regard to our stands, the municipal valuation showed an increase of nearly 50 per cent. Opportunities from time to time have presented themselves for selling some of these stands at prices showing profits; only a very few of these we have accepted, feeling sure that the proper policy for your Board to adopt is to await developments which we are certain will enable us to deal much more profitably with this most valuable asset. Our view is that we should not, unless under exceptional circumstances, sell any of our stands without at the same time imposing obligations on purchasers to erect substantial buildings, and by this means create additional value for our adjoining stands. Our interests in Bulawayo are also of an important description, and we look with confidence to a like increase in the value of these and other holdings in different townships. Salisbury is the capital of Rhodesia, and the development of this great country, which is now in active progress, both with regard to its mining and land interests, is certain to greatly add to the value of our freeholds in that city. Every country from time to time has to meet unfavourable conditions with regard to its development and progress, and it would be idle for one to attempt to minimise the great trouble which has been experienced in Rhodesia during the period covered by your company's report in connection, firstly, with labour trouble, and, secondly, with the recent severe drought. The responsible organisation of a Labour Bureau, however, is now beginning to have its good effect, and though labour troubles may not entirely pass away, still they should, with wise counsels prevailing, be very greatly minimised.

#### AN ABNORMAL YEAR.

The drought has made itself badly felt, but there can be no gainsaying the fact that the last year has been in every sense an abnormal one in this respect, and, without in any way seeking to be optimistic, I think it may be concluded that similar conditions are unlikely to arise for many years to come. Matters such as these turn out ultimately to be a benefit, for they produce legislative enactments whereby the effects of a recurrence of such troubles will be considerably lessened. I must point out that difficulties of the foregoing description are not confined to Rhodesia, for even in our own country of Great Britain we have, during the past year or so, had enormous troubles to deal with in regard to labour—troubles which have had a far reaching effect, and which have, in fact, badly retarded the progress of mining operations in Rhodesia. Machinery ordered from this country for the mines there could not be delivered until many months after the time contracted for in consequence of labour troubles here in our own country. Again, abnormal climatic conditions are met with from time to time in every country in the world, and I think, on consideration, it will be found that Rhodesia has nothing to fear by comparison in these matters. The big mines of Rhodesia—in this category I include the Shamva, Cani and Motor, Falcon, Planet-Arcurus, etc.—are steadily and surely approaching the productive stage, and I venture to believe that the output of gold and the profits thereby earned from these mines will greatly astonish those who in the past have had so little to say in favour of Rhodesia as a mining country. The wonderful potentialities of Rhodesian land, possessing as it does remarkable inducements for its development by the creation of ranching and mixed agricultural industries, can hardly be over-rated. You have seen that in Canada the price of land has sprung up by leaps and bounds. It is common knowledge that a few years back land in Canada which could be had for a merely nominal figure is to-day commanding prices showing a tremendous increase in value. The all round climatic conditions of Rhodesia are infinitely superior to those of Canada. Rhodesia possesses a great variety of soils difficult to improve on in any part of the world; therefore, with the equable climate, the fertile soil, the growing population, and the marked commercial and mining progress,

successful development of land in Rhodesia and its consequent increase in value must be assured, and with it also must come a great increase in the value of freehold land in the cities of Salisbury, Bulawayo, and other townships. (Hear, hear.)

#### MINING INTERESTS.

Turning to our mining interests, you will see that we have developed with a fair measure of success a mining property in the Filabusi district, on which we have, to date, proved some 20,000 tons of ore with an average value of over 1 oz. per ton. We have also erected on the property a five-head stamp battery of 1,250 lbs. each, and we shall now be able to carry on operations which will not only provide the company with a substantial revenue, but also pay for the further active development of the mine, both laterally and in depth. Here I venture to express the opinion that in the past too little attention has been given to what I may call the smaller mines. Such mines as the Shamva, Cam and Motor, Falcon, etc., are unique, not only in the history of Rhodesia, but in the mining history of the world, and I think that the policy we have adopted in respect to our Fred mine, in the Filabusi district, might be copied with advantage in regard to other small mining propositions. Indications of a small mine becoming a big mine can only be found as the result of consistent and steady development work, and if this can be carried out by funds produced by the mine itself, then, surely, it is better to work on these lines rather than draw upon and impoverish the cash resources of the company. Do not for one moment think that I deprecate the policy which has governed the development of the big mines before referred to; they are, as I have said, unique, but I do think that throughout Rhodesia too little attention has been paid in the past to the possibilities of smaller mines. I believe that in Rhodesia it would be found much more easy to find five mines which would return the owners, with intelligent development work, a net profit of, say, £20,000 per annum each, than to find one mine to return a profit of £100,000 per annum. At all events, I am sure you will not dissent from, or quarrel with, the policy we have adopted of losing no time in erecting our battery, enabling us not only to pay for the continued development of our mine, but to earn a substantial revenue, instead of deferring the producing stage, drawing upon our cash resources to carry out an extensive system of development work and a consequent long postponement of profitable results. You will further see from the report that we have joined with the Amalgamated Properties of Rhodesia, Ltd., in securing a half-interest (with an option for one year to purchase the other half) in 300 claims adjoining the Turkoiis mine, in the Hartley district, and we are also similarly interested with that company in a working option for one year over fifty other claims in the same district. These interests, as the report informs you, have been acquired upon the strong recommendation of Mr. Dickinson, and, knowing that gentleman's capabilities and experience as a mining engineer so well, I am sure he would not have made such recommendations unless he had very substantial grounds for so doing.

#### COMPANY'S LAND HOLDING IN RHODESIA.

Our land holding in Rhodesia consists of 37,698 acres in the Bulawayo, Salisbury and Umtali districts, having, I am sure, a value far and away above the figure at which they stand in our books. We have also a half-interest in four estates in the Gwanda and Tuli districts aggregating 298,431 acres, the other half being held by the Amalgamated Properties of Rhodesia, Ltd. We have given instructions to at once commence ranching operations here, and the result should be both satisfactory and profitable. These areas have been reported upon by Mr. Stewart Richardson, one of the highest agricultural authorities in Rhodesia. Three of these estates are immediately to the north, and the other to the south of the large ranch owned by the important firm of Messrs. Liebig and Co., where they already have some 10,000 head of cattle. Quite apart from Mr. Stewart Richardson's recommendations to start ranching on these estates, I think the fact that we practically adjoin the large ranch owned by Messrs. Liebig and Co. is another factor to make us believe that we have exercised a wise step and followed a good lead in this matter. I may say that Mr. Stewart Richardson concludes his report upon this land by stating that disease in connection with cattle has never been known in the Gwanda district, which is clean in every respect. We look forward with confidence to turning this ranching business into an asset of very great value. Naturally it will take some time for us to arrive at the goal of our success: it takes time, patience and money to develop a ranch. When developed, however, the profits are very great; but possessing, as we do, a half-interest in these four estates, covering an area of nearly 300,000 acres, well watered and in close proximity to a railway, then, surely, we have the conditions which make for an ultimate big success. The large tract of land at Delagoa Bay is an asset which must eventually be of great value, and the important holdings in English estates will likewise, I am certain, in the course of time show a very substantial increase. I have now dealt with practically all our interests, and I am sure you will all agree with me that in the course of my remarks I have shown that the company's position is thoroughly sound and its prospects most excellent. I now beg to formally move: "That the directors' report and accounts to the 30th September, 1912, be received and adopted," and I will ask one of my colleagues to second that resolution, after which I shall have pleasure in replying to any question that may be put. Mr. H. B. Jameson seconded the resolution.

#### THE QUESTION OF DIVIDEND.

Mr. Loveridge said he thought that out of the balance carried forward the directors could have paid a dividend of 2 per cent. Probably many of the shareholders acquired the shares of the com-

panies which constituted that company at very high prices. Mr. Bourne said he was an original shareholder from 1902 in one of the companies which were amalgamated, and he thought it was time that shareholders received some return on the money they had invested. Mr. Wileman spoke in eulogistic terms of the prospect of the company. The Chairman, in reply, said: The first speaker asked me the question as to whether out of the £11,000 at present at credit of profit and loss account we could not pay a dividend of 2 per cent. That goes without saying. I do not think we should like to start the history of this company by paying a dividend of 2 per cent., and I do not think there is a single shareholder who would like to see this company make a distribution at that rate. It is altogether out of keeping with the company's importance. I really do think that I am not being quite fairly tackled by these two gentlemen on the position of this company. No one can have a greater sympathy than I possess—and my colleagues share it with me—at the fact that any shareholder here present should have been associated in interests and assets now held by this company from the year 1902 onwards without the payment of a dividend. It is difficult for me to know to which company the second speaker referred, but I can only say this with regard to the assets merged in this company, and previously held by other companies, that I was not aware of their existence in 1902, and therefore cannot be blamed from that period onwards. I was a director of the British and Colonial Investments, Ltd., for a short period, and during the first portion we paid a dividend of 6 per cent., free of tax. The Salisbury and Rhodesia Estates was the gathering together of most valuable assets now comprised in your balance sheet under the heading of properties in Salisbury, but which reached us in a most complicated and "mucked-up" condition, if I may use the expression. I am certain my speech is not optimistic. I do think, if I am favoured with the good luck which will continue life within me to meet you again a year from now, that the remarks I put forward for your consideration with regard to the assets which the company holds will turn out to have borne good fruit. We have whittled down things which are of no good to us, we have cut off dead branches from the tree, and we have to-day, in presenting you with a statement of your position, given you a statement which is clear, straightforward, honest and honourable in every respect, both to the Board of Directors, which I have the honour to represent to-day, and to yourselves as shareholders. The proof of the pudding must be in the eating, and if I cannot meet you face to face as a man at the next general meeting of this company and give a proper account of our stewardship—gentlemen, kick me off. You have wonderful assets in this company, but you cannot, under conditions such as we have had to meet with in the last year, make things jump. Everything on the market, as you must know, is down to the very lowest ebb. You have had labour troubles, a Balkan war, and you have been threatened with European complications, under which circumstances not only the assets of your company and your shares have been put down to low prices, but Consols and every choice trustee investment has been knocked down to a figure far below their intrinsic value. Now, do play the game. I am sure you mean to be fair, but it is neither right nor fair to come here and to blame us for not paying a dividend, and to say, "We are going to blame you because, forsooth, the shares we have got we cannot go and sell at a big premium." Do be patient and give us a reasonable and fair chance of working in your interests, and you will help us to work in your interests so much better if you do not unfairly grumble at the work which we do. In the remarks that I have made just now, do not think that I have lost, as I have already told you, any feeling of sympathy with the shareholders of this company who find that their holding is not realisable, except at a loss. I have that sympathy, and I am working like a nigger. I can assure you that for the last six weeks I have been at the offices of the company at ten in the morning, and it has been ten at night before I have left. I cannot make black white or white black. All that one can possibly do is to use one's best efforts in a straightforward, clean-cut manner, not only to earn a creditable appreciation of one's work from your good selves, but to make more valuable the assets which your company possesses.

Mr. Loveridge said he thought the Chairman had not answered his question as to whether there was not enough to pay a 2 per cent. dividend.

The Chairman: I will answer any question you ask.

Mr. Loveridge asked what was the character of the securities on which the company had loaned £53,000.

The Chairman: The majority of these loans are made on the Stock Exchange from Account to Account; the differences are paid off—if they are in our favour we receive, and if they are against us we pay. They are transactions with responsible brokers and with good margins of security. In regard to the other loans the balance is made up of quoted shares with a margin from 50 to 60 per cent. on the present quoted prices on the Stock Exchange.

A Shareholder: What about our land at Edgware?

The Chairman: The land at Edgware is being developed, and by the time the tube railway, which is now projected, gets there—and it will not be long—our interest in the land at Edgware will not only be increased, but will have doubled itself in value. So you see I have not been very optimistic with regard to that. You must allow me to keep a little something up my sleeve. You may think I am putting out all the favourable points. I am not, but do not try and extract anything further from me, if you don't mind.

The resolution was carried unanimously.

The auditors, Messrs. Arthur Goddard and Co., were re-elected, on the motion of Mr. Taylor, seconded by Mr. Wileman, and the proceedings closed with a vote of thanks to the Chairman, directors and staff.

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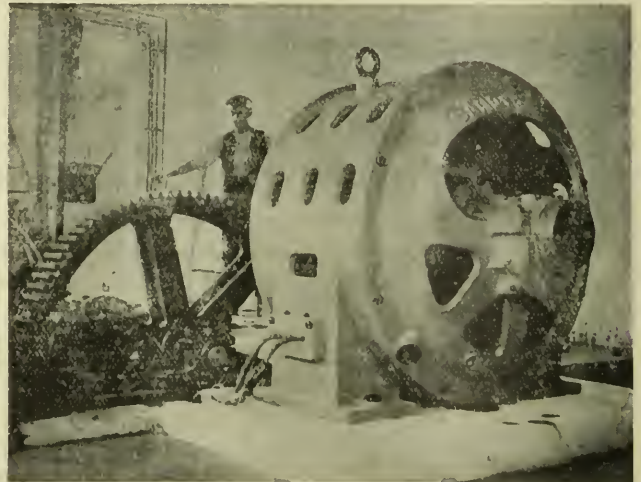
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## ELECTRICAL DISTRIBUTION FOR MINES.\*

[By J. W. ANSON, A.M.I.E.E.]

1. **INTRODUCTORY.**—It is apparent at the present time that the future success of these goldfields will be largely dependent on the electrical engineering work which has been accomplished during the past two-and-a-half years; that which is being carried out at the present time; and also that which will undoubtedly be undertaken in the near future. Now that the extreme flexibility of electricity as a motive power has been conclusively demonstrated, it is not too much to say that in all future winding and reduction plants, erected on these goldfields, the design of these plants will be such that electricity will be employed as the motive power throughout. Furthermore, all future extensions, additions, and new processes will be dependent on electricity for their energy, and under these circumstances it behoves the members of this Institute, by whom the greater portion of the electrical work will be carried out, and by whom the science of electrical engineering is represented on these goldfields, to carry out the work in such a manner as to produce a safe, reliable and well finished job. When one considers the number of new properties not yet even in the developing stage; the number of properties now in the developing stage and which will shortly be erecting their respective reduction plants; and the large number of properties which are prevented from extending their plants, owing to the temporary cloud of depression which hangs over this great industry, it is obvious that the near future will afford unlimited scope for the electrical engineer to show that he is capable of taking great responsibilities, and of applying electrical energy to any plant on a mine for which it may be required. Again, one must not be disappointed if results and profits are not immediately affected by the electrification of an existing reduction plant. In the transition stage, whilst changing over from steam to electricity, working costs may rise and profits be adversely affected, but that the improvement and saving will come in time there is no doubt whatever; in years to come the saving in maintenance costs alone would justify any plant being electrified. In view, therefore, of the utmost importance of electrical engineering on these mines, the author considered that it would be of interest to members to discuss the various questions which arise when an existing reduction plant has to be electrified, or when the electrical equipment of a new reduction plant or process has to be designed.

2. **System of Power Supply.**—As the majority of the mines use power purchased at suitable pressures, from either the Victoria Falls and Transvaal Power Company, Limited, or the Rand Mines Power Supply Company, Limited, and the minority of the mines have their own power stations, the author proposes to deal with those mines which draw their energy from a transformer house or transformer houses, erected on the mine property, containing the transformers which transform the extra high tension three phase alternating current taken from the Power Supply Company's network, into three phase current suitable for use on the mine. This secondary voltage is either 2,000 or 500 volts, and these pressures are used on the mine motors according to their size and horse power.

3. **The Mining Company's Side of Transformer Houses.**—It is impossible to over-estimate the importance of this work, as the switchgear in the transformer house is the only portion of the electrical equipment which it is impossible to duplicate. A serious breakdown in the transformer house

could easily cause a complete shut down on a mine for a period of two or three days. This would not only cause a large drop in the profits for the month, but would undoubtedly reflect badly on electrical engineering. It is essential therefore that the utmost thought and consideration should be devoted to the design of this portion of the equipment. The following facts should be remembered:—(a) After the bus-bars have been made alive and put on load, it may not be possible to make them dead again at any time. For this reason, work on bus-bars and solid connections attached to bus-bars, should be absolutely complete down to the smallest detail, before they are made alive. (b) Owing to the large capacities of the generating stations, and distribution systems of the Victoria Falls and Transvaal Power Company, Limited, and the Rand Mines Power Supply Company, Limited, the effect of a short circuit across the phases might be disastrous. It therefore becomes necessary to isolate each phase as much as possible; to reduce the amount of combustible material used in the construction to a minimum, in order to lessen the effects of fire; and, finally, in the event of serious trouble arising, to confine that trouble to one place, so that the whole of the switchgear is not destroyed. Bearing in mind the above fundamental principles, one can now proceed to lay out the general features of the equipment in the following manner:—(a) **Bus-Bars:** These should be of ample cross sectional area throughout to carry the whole of the current available from the secondary windings of the transformers, and should be totally enclosed in brickwork or slate chambers. They should be supported on combined bus-bar insulators and connectors over each panel, from the underside of which connections should be made to the top side of the isolating links for that panel. (b) **Main Feeder Panels:** These should be enclosed on each side by brickwork barriers. All the high tension apparatus belonging to any one panel should be contained in the cubicle for that panel; this comprises isolating links, connectors, main oil switch, current transformers, and cable box or boxes. The isolating links may be carried on two angle irons, running the whole length of the station, through the brickwork forming the cubicles. From the top contacts of the isolating links to the underside of the combined bus-bar insulators and connectors, it would probably be convenient to connect with copper strap, but from the bottom contacts of the isolating links to one side of the main oil switch, and from the other side of the main oil switch to the current transformers, bare tinned copper rod,  $\frac{3}{4}$  in. or  $\frac{1}{2}$  in. in diameter, should be used. This bare copper rod is extremely neat in appearance; and, of course, is free from combustible insulating material.

(To be continued.)

## High Mining Salaries

EARNED by those holding Mining Certificates as Mine Managers, Foremen, Surveyors, Mechanical and Electrical Engineers and Engine Drivers. Private Individual Tuition and Correspondence Lessons where personal tuition is impossible.—E. J. MOYNIHAN, Consulting Engineer, 35 and 36 Cuthbert's Buildings; Box 2061.

Tell advertisers you saw it in the *South African Mining Journal*.

\*From paper read before the S.A. Institute of Electrical Engineers.

### Rand Mines Power Supply Co.

The fourth annual meeting of the Rand Mines Power Supply Co., Ltd., was held last week. Mr. F. D. P. Chaplin, M.L.A., presided, and others present were Major the Hon. W. L. Bagot, D.S.O., Messrs. Howard Pim, B. Price, W. E. Goldby, T. G. Otley, H. de V. Steytler, F. Leslie Brown and C. L. Bryden.

Shares represented totalled 499,699 out of an issued capital of 500,000.

The Chairman said: The information contained in the report and accounts now before you is so full that little remains to be said with regard to the results of the last financial year. The report and accounts show the rapid progress which your company has made since entering the revenue-earning stage, and indicate that there is every prospect of a considerable growth in the company's business in the immediate future. Notwithstanding the fact that your company is still partly in the construction stage, it was able to earn a profit of close upon a quarter of a million during the financial year ended August 31st last. This satisfactory result would have been even better had we not met with the unfortunate breakdowns referred to in the report, which involved not only the payment of penalties, but also a considerable loss of revenue, as well as increased expenditure in bringing the plant again into commission. The company's experience in regard to breakdowns appears to be one which is inseparable from the entry of large generating units into commercial service, especially when, as in this case, the commencement of operations is accelerated on account of urgent and increasing demands for power before sufficient reserve plant is available. However carefully the machinery is designed and constructed, reliability can only be secured through experience gained in actual operation. There can be no question, however, that the policy adopted enabled your company to derive the greatest possible advantage in the shape of revenue from the full output of the plant, and at the same time furthered the interests of consumers by the provision of the available supply of power at the earliest possible date. You will gather from the report before you that adequate arrangements have been made for the extension of your company's generating stations and transmission and distribution systems. Everything possible is being done to provide a sufficient supply of power to meet notified future demands, and, provided that the manufacture of plant and the progress of the extension works are not hampered by delays due to strikes in Europe and other causes, which have been our unfortunate experience in the past, there is every reason to believe that your company will soon be provided with the full complement of plant and equipment, inclusive of reserve plant, necessary to meet all requirements. After your company had commenced operations, experience soon indicated that there were several defects in the agreement between your company and the Rand Mines, Limited, which would have to be remedied, and

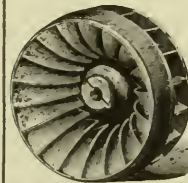
certain alterations would have to be made before the contract could be regarded as a workable instrument and satisfactory to the parties concerned. The decision to draw up a new agreement and form of contract was no light undertaking, and not only entailed very difficult negotiations between the representatives of your board, acting with the Victoria Falls and Transvaal Power Co., Ltd., and the representatives of the Rand Mines, Ltd., but also involved an immense amount of labour and care in the preparation of such important documents. This new contract, although not yet finally agreed, is now in the hands of the representatives of your company and the Rand Mines, Ltd., in London, and we expect very shortly to hear that the document has been completed. As the result of the very close relations which have been found to exist between your company and the Victoria Falls and Transvaal Power Co., Ltd., it has been thought advisable to arrange the accounts upon a basis which was not originally contemplated. As a part of this arrangement it was found advisable that one firm of auditors should audit the accounts of both companies, and it has consequently been arranged, in order to bring this about, that a change should be made in the auditors of your company. The fact of this change must not be considered to reflect in any way upon the professional capacity of Messrs. C. L. Andersson and Co., and Mr. Charles Stuart, who have hitherto acted as auditors of your company, but is solely due to the reasons I have mentioned. The board also desires me to express to shareholders their appreciation of the services of Messrs. C. L. Andersson and Co. and Mr. Charles Stuart.

The report and accounts were adopted.

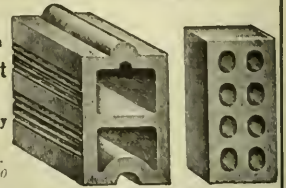
Messrs. F. D. P. Chaplin, M.L.A., and Mr. W. E. Goldby were re-elected directors.

Messrs. Aiken and Carter were re-elected auditors.

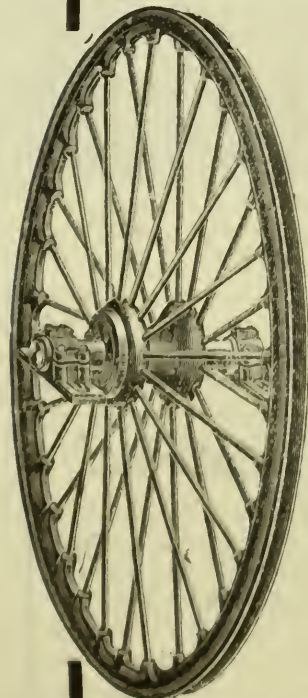
### TURBINES. MACHINES FOR BRICKMAKING.



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## Headgear Sheaves

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Up to 25 feet in Diameter.

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Specially Suited for deep Mining, any Section or Load.

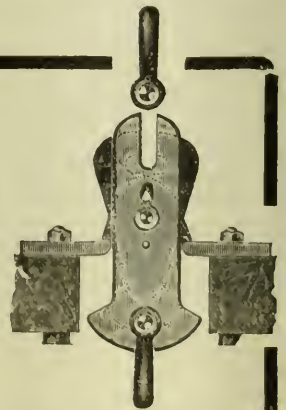
## Safety Detaching Hooks <sup>A</sup>Speciality

Full particulars from: **THOMPSON & SOUTHWICK, LD.**

(Export Dept.) ENGINEERS,

Cables: "PULLEYS."

**TAMWORTH, England.**





## THE WEEK IN THE SHAREMARKET.

**Conflicting Rumours—Is It Peace or War?—Awaiting Developments.**

A REFRESHINGLY active note pervaded the market on Thursday, owing to rumours of peace. Whether the new Turkish Cabinet is "out for" more trouble or not remains to be seen, but it is plain that the outlook is still somewhat clouded. All descriptions of stock participated in the improvement on Thursday, the leading Rand shares, of course, mainly claiming attention. Tins and diamond syndicates were also in better demand, and the last-named, in view of the good diamond market, keep quite active in a small way.

	* Friday, 17th.	* Sat., 18th.	* Monday, 20th.	* Tuesday, 21st.	Wed. 22nd.	Thurs. 23rd.
African Farms	16 9B	15 9	16 9B	16 9B	16 19B	17 6
Aurora West	10 0	10 0B	10 0	10 0B	10 0B	10 0B
Apex Mines	24 6	24 6	25 6B	26 9B	27 3B	29 0
Bantjes Consolidated	23 3B	23 0B	23 3B	23 6B	23 9B	
Benonis	4 1B	4 0B	4 0		4 2B	4 8
Bushveld Tins	0 11B	0 10B	0 10B	0 10B		1 0
Brakpan Mines	80 0B	81 0B	81 0B	81 0B	82 6B	84 0B
Blaauwbosch	73 0B	77 6B	77 6	80 6	80 0	83 0B
Breyten Collieries	30 0B	30 0B	30 0B	30 0B	30 0B	30 0B
British S.A.		26 6B			26 9B	24 9B
City and Suburban	42 3	42 0B	43 0	43 0B	43 6	44 6B
City Deeps	60 6	60 0B	60 6B	60 6B	62 0	63 3
Cloverfield Mines	6 9B	6 9B		6 8B	6 9B	7 3
Cons. Langlaagtes	28 9B	28 6B	29 0B	28 9B	29 0B	29 3
Cons. Main Reefs	20 0	19 9	19 9	19 9	19 9B	21 3
Coronation Freeholds	0 6B	0 6B	0 6B			0 6B
Coronation Colls.	15 0B		17 6B		16 6B	17 0B
Clydesdales	8 6B	8 6B	8 6B			9 0B
Crown Mines	140 0B	140 0B	140 0B		142 0B	145 0B
East Rand Cent.	11 3B	11 3B	11 3B	11 6B	11 0B	11 6
East Rand Coals		2 2B	2 2	2 2B	2 2B	2 2B
East Rand Deeps	3 0B	2 9	2 8B	2 8B		2 9B
East Rand Props.				57 0		57 0B
East Rand Deb.	£90	£90	£90		£91	£91
Eastern Gold Mines	2 0B	2 1B	2 0B	2 1B		2 1B
Frank Smith Diam.	9 3B	9 0B	9 6B	10 9	10 6B	11 6
Govt. Areas	20 3B	20 3B	20 3	20 0B	20 0B	20 4
Glencoe (Natal) Colls.	7 3B	7 0B	7 0B	6 0B	6 6B	
Geduld Props.	23 0B	22 6B	22 6B	22 6B	22 0B	23 9
General Minings	21 0B	21 0B	21 0B	21 0B	21 0B	21 0B
Hex Rivers	2 0B				2 6B	
Jupiters	11 9B	13 0B	11 9B	11 9B		
Klerksdorp Props.	3 3B	3 3B	2 11B	2 10B	2 11B	3 0
Knight Centrals	12 9B	12 9	12 9B	12 9B	12 9B	13 3
Kaalfontein Diamonds	0 3B	0 3B	0 4	0 4	0 8	0 5B
Luijpaardsvlei Estates		8 0B	8 0B	8 0B		9 0B
Lace Props.	4 1	4 0B	4 1	4 0	3 11B	4 1B
Lydenburg Gold Farms	2 6B	2 8B	2 6B	2 6B	2 6B	2 6B
Main Reef Wests	18 6B	18 0B	18 0B	18 3B	19 0B	19 0B
Modder B's		70 0	69 0B	70 0B	70 6B	72 3
Middelvlei Estates	1 3B	1 4B	1 3B	1 3B	1 3B	1 4B
Modder Deeps	38 6B	38 6B	40 0B	39 3B	33 6B	39 6
New Eras	7 9B		7 6B	7 6B	7 6B	8 0B
New Kleinfonteins	21 0B		21 0B	20 0B	20 0B	21 0B
New Rietfonteins	7 0B	7 0B	8 0B	8 0B	8 0B	7 0B
New Boksburgs	1 6B	2 0B		1 3B	2 0	1 6B
New Geduld Deeps	2 8	2 8B	2 7B	2 7B	2 7B	2 8B
New Eland Diam.	32 0B	32 6B	32 6B	32 6B	32 6	32 6B
Orange Diamonds	1 6B	1 5B	1 7	1 6B	1 6B	1 6
Pretoria Cement Co.	49 0B	49 0B	50 0B	50 0B	50 6B	51 6B
Princess	9 0B	9 0B	8 9B	8 9B	8 9B	9 0
Potchefstroom Est.	1 0B					1 0B
Rand Nucleus	3 0B	3 0B	3 0B	3 0B	3 0B	3 0B
Randfontein Estates	30 0B	30 6B	30 6B	30 6B	30 9B	31 9
Randfontein Deeps	5 6B	5 0B				6 9B
Rooiberg Minerals	31 9B	31 6B	31 6B	31 6B	31 6B	32 0
Rand Klips	4 6	4 6B	4 6	4 3B	4 4B	4 6B
Roberts Victors	45 0B	45 0	45 0B	45 0B		45 0B
Ryan Nigels	3 6B	3 6B	3 6B	3 6B		3 6B
Robinson Deeps	44 0B	43 6B		42 6B		44 0B
Simmer Deeps		2 6B		2 6B	2 6B	2 9B

\* Buyers.

\* Sellers.

	Friday, 17th.	Sat., 18th.	Monday, 20th.	Tuesday, 21st.	Wed., 22nd.	Thurs. 23rd.
South African Lands	4 4B	4 4B	4 4B	4 4	4 3B	4 6
Sub Nigels	10 6B	10 9B	10 6B	10 9B	10 9B	11 0B
Springs Mines	15 6B	15 6	15 9B		15 0B	16 0
Shebas	5 3B				5 3B	6 0B
S. A. Breweries		39 0B	40 0B	40 3B	40 0B	40 0B
Swaziland Tins			30 0B			30 0B
Trans. G.M. Estates	53 0B	52 6B	53 0B	53 0B	54 0B	53 6B
Trans. Coal Trusts	46 3B	46 6B	47 0	46 9B	47 0B	48 6
Temple Tins	1 0B	1 0B	0 8B			
Trans. Cons. Lands					25 0B	29 0B
Van Ryn Deeps	21 3B	21 0	21 6	21 3B	21 6B	22 6
Village Deeps	42 6B					42 8B
Vogel. Cons. Deeps	2 0B	2 0B		1 9B	1 9B	2 0B
Wolhuters	17 9B	18 0B	18 0B	18 3	18 0B	18 0B
Wit. Deeps	51 0B	51 0B	51 0B	51 0B	51 0B	52 6B
Witbank Collieries	45 0B				45 0B	46 0B
West Rand Est.	3 4B	3 6B	3 6B	3 6B	3 3B	
West Rand Con.	15 6B	16 0B	15 9B		16 6B	16 9B
Zaaiplaats	33 6B	33 4	33 9	33 0B	33 0B	33 6

\* Buyers.

\* Sellers.

## MINING MEN AND MATTERS.

Sir Abe Bailey returns to the Rand shortly.

\* \* \* \*

Mr. George Nathan returns to the Rand next week.

\* \* \* \*

Mr. G. H. Blenkinsop, M.I.M.M., is visiting the Rand.

\* \* \* \*

Prof. G. R. Thompson has resigned from the principalship of the S.A. School of Mines.

\* \* \* \*

The annual general meeting of the Transvaal Chamber of Mines will be held on Thursday, February 27.

\* \* \* \*

The Association of Certificated (S.A.) Mechanical Engineers are holding their annual smoking concert at the Langham Hotel on Saturday evening next at 8.15 p.m. Chair will be occupied by S. McChesney, Esq. (Chief Engineer, Meyer and Charlton mine). Several of the most prominent mining and mechanical engineers will be present. Members and friends can obtain tickets from the Hon. Secretary, P.O. Box 4305, Johannesburg.

\* \* \* \*

The following changes are taking place in the staffs of the Consolidated Gold Fields mines:—Mr. J. H. Wilson, engineer of the Simmer and Jack, is going temporarily to the Knights Deep, his place being taken by Mr. Carr, of the Sub Nigel. The position at the latter property will be taken by Mr. Tellan, for some time at the Knights Deep. Mr. J. M. Dixon, battery manager of the Simmer and Jack, has changed positions with Mr. W. H. Stout, of the Robinson Deep.

## Situation Wanted.

EXPERIENCED MINER, certificated, two years German Mining School, ten months' local experience, employed for many years in Coal, Silver-lead, Copper and Diamond Mines, also as Surveyor and Engineer on Electric Railways. Thorough experience of all machinery for ore-dressing and output operations.

K. Sch., c/o "S.A. Mining Journal," Box 963, Johannesburg.

## Finance, Commerce, and Industries.

The directors of this institution have decided, subject to final audit of the accounts, to make the following recommendations at the general meeting of shareholders to be held on the 2nd May next:—(1) Declaration of a dividend at the rate of 6 per cent. for the year ending 31st December, 1912. (2) To place £130,000 to reserve fund, which will thus be increased to £500,000. (3) To place £20,000 in reduction of purchase account of the National Bank of the Orange River Colony, Ltd. (4) To add £25,000 to officers' pension fund. To carry forward £20,000 to next year. Provision has been made for cost of fusion with the Bank of Africa, Ltd., for writing down of premises and securities, and for bad and doubtful debts.

\* \* \* \*

The weekly returns issued by the South African Railways show the following approximate earnings for the 52 weeks ended the 28th of December last, as compared with the earnings for the corresponding period of the previous year, viz.:—

From	1911.	1911.
Passengers ... ..	£3,262,728	£3,049,248
Parcels ... ..	318,502	301,026
Goods ... ..	5,880,999	5,908,332
Coal ... ..	1,958,766	2,011,272
Livestock ... ..	386,441	385,307
Miscellaneous ... ..	345,571	358,804
Totals ... ..	£12,153,010	£12,013,989

\* \* \* \*

The following is a summary of the returns showing the tonnage of commercial sea-borne traffic forwarded from the ports to the competitive area; and the percentages from the several ports:—

### S.A.R. Traffic Returns.

#### GROUP I. (CLASSES 1 TO 3).

Period.	Average Monthly Tonnage.	Cape Ports.	Natal.	Delagoa Bay.
Year 1910 ... ..	33,682	11:33	25:45	63:22
Year 1911 ... ..	28,378	11:39	31:19	54:42
1st quarter, 1912 ...	27,366	11:69	34:51	50:78
2nd quarter, 1912 ...	28,003	11:19	35:16	50:65
3rd quarter, 1912 ...	22,703	16:09	34:64	49:27
October, 1912 ... ..	25,703	16:39	30:51	53:10
November, 1912 ... ..	24,814	19:31	35:80	41:89
December, 1912 ... ..	22,631	15:21	36:02	48:77
Year 1912 ... ..	25,611	15:42	31:60	49:98

#### GROUP II. (CLASSES 4 TO 8 AND 13).

Year 1910 ... ..	17,709	7:79	20:74	71:47
Year 1911 ... ..	17,078	8:38	22:75	68:87
1st quarter, 1912 ...	11,059	11:13	19:81	69:03
2nd quarter, 1912 ...	12,846	8:50	17:13	74:37
3rd quarter, 1912 ...	11,168	10:99	33:11	55:60
October, 1912 ... ..	22,145	9:92	24:36	65:72
November, 1912 ... ..	17,865	9:11	21:93	65:93
December, 1912 ... ..	13,714	13:23	35:23	51:54
Year 1912 ... ..	14,745	10:33	24:70	64:88

#### GROSS TOTALS.

Year 1910 ... ..	51,390	10:10	23:84	66:06
Year 1911 ... ..	45,456	12:13	28:02	59:85
1st quarter, 1912 ...	41,425	13:47	29:53	57:00
2nd quarter, 1912 ...	40,849	12:40	29:49	58:11
3rd quarter, 1912 ...	36,871	11:13	34:17	51:70
October, 1912 ... ..	47,848	13:40	27:66	58:94
November, 1912 ... ..	42,679	15:05	31:25	53:70
December, 1912 ... ..	36,345	14:16	35:73	49:81
Year 1912 ... ..	40,350	13:56	31:01	55:43

The report of the Chief Conservator of Forests, Mr. J. Storr Lister, for 1911, has been issued. Under the Union Forest Department, the forest departments of the different provinces were amalgamated, and the system in force in the Cape applied throughout. A draft Forest Act for the Union has since been drawn up and submitted to Parliament, mainly on the lines of the Cape Act of 1888. The present report gives the customary details of working for the year. The value of timber shipped to colonial ports, as shown in the Customs returns from Knysna is steadily increasing. The values for 1911 were: manufactured £14,032, unmanufactured £36,436. On the other hand, the supply of sleepers made from indigenous wood is decreasing, as those who have so often lamented the use for this purpose of wood capable of being turned to better account will be glad to observe. £3,145 worth of boxwood was exported during 1911, and it is interesting to note that this South African timber is in demand for the manufacture of bobbins for the Lancashire mills. The wattle bark exports have grown by 330 per cent. during the past six years. Reports from Europe describe it as an excellent tanning material, but the fact has been disclosed.

## Positions Vacant.

### WANTED.

MANAGER for Coal Mine. Must have South African Certificate of Competency and good knowledge of Mechanical and Electrical Engineering. Salary, £500 per annum, with free quarters. Living moderately cheap. Applications, stating when duties can be commenced, with copies of testimonials, to be sent to The Standard Bank of South Africa, Ltd., Intelligence Department, Box 1031, Johannesburg.

## MINE SURVEYOR-SAMPLER.

Applications are invited for the position of Mine Surveyor-Sampler to the Zaaiploats Tin Mining Company, Limited, Sterkwater, and should be addressed to the Secretary, P.O. Box 179, Pretoria. Full particulars of qualifications and past experiences, together with salary required, must be stated. The successful applicant will be required to take up his duties on 1st March, 1913.

## The South African School of Mines and Technology, Johannesburg.

### DEPARTMENT OF METALLURGY AND ASSAYING.

Applications are invited for the post of Assistant Lecturer and Demonstrator. Candidates should be well qualified in experimental Metallurgical work and Assaying, and must devote their whole time to the duties, which include both day and evening classes. Salary £25 per month. Applications must be sent in on or before January 31st, and any further particulars can be obtained on application to the Secretary, P.O. Box 1176, Johannesburg.

through the Trade Commissioner, that England uses only a very small proportion of the product, the reason being that English tanners prefer to obtain their tannic acid in the solid extract form. The price of wattle bark has dropped greatly in recent years, and with increased exportation is expected to decline still further. Were it not that Germany, having no duty on bark but a duty on the extract (the manufacture of which it desires to encourage within the country), imports the bark to a large extent, the trade, we have it on the authority of the Commissioner, would die away. The remedy for the South African producer, the Conservator of Forests suggests, is to produce an extract in the dry form, which would have a wider sale, and be more valuable than the raw bark shipments now in vogue, besides enabling a saving in freight.

\* \* \* \*

The Natal Bank has declared a dividend for the half year at the rate of 4 per cent. per annum, making with the interim dividend declared in July last, 8 per cent. for the year, after providing £15,000 for the depreciation of investments and £11,175 being carried forward.

**Natal Bank  
Dividend.**

\* \* \* \*

The forty-third report of the board of directors, presented to the shareholders at the ordinary general meeting, on Thursday, January 2, states: **African Banking Corporation.** The directors beg to submit to the shareholders a statement of the assets and liabilities of the bank on September 30 last, with profit and loss account for the year which ended at that date. The profit and loss account shows a gross profit of £232,721 14s. 3d., including £14,641 14s. brought forward from last account. After deducting current charges and rebate, the interim dividend at the rate of six per cent. per annum paid on July 5 this year for the six months to March 31 last, placing £25,000 to reserve fund, carrying £2,500 to staff guarantee and savings fund and allowing £1,688 for depreciation of furniture, there remains the sum of £33,760 19s. 5d., which the directors propose to apply as follows: Dividend at the rate of 8 per cent. per annum for the half-year ended September 30, 1912, payable January 3, 1913, subject to deduction of income tax (making 7 per cent. dividend for the year), £16,000; balance to be carried forward, £17,760 19s. 5d.; total, £33,760 19s. 5d. Mr. Robert Littlejohn and Sir Godfrey Yeatman Lagden, K.C.M.G., retire from the Board, but, being eligible, they offer themselves for re-election. In accordance with the articles of association, auditors for the current year have to be appointed by the shareholders at the meeting. Messrs. Price, Waterhouse & Co. offer themselves for re-election.

\* \* \* \*

A strong protest has been entered by the building and manufacturing interests of the Rand against **Railway Rates.** The existing high railway rates on raw steel and iron, as compared with the low rates charged on the worked-up product. For iron and steel girders, plates, and hoop and sheet iron, from Delagoa Bay to Johannesburg, the rate is £5 per ton. On iron and steel ingots and pig iron it is £3 0s. 10d. On the other hand, the manufactured material in the shape of iron gates is carried the same distance for £3 1s., agricultural machinery and windmills £1 19s. 2d., irrigation plant and machinery, £1 16s., and fencing material £1 1s. 3d. The manufacturers point out that it is impossible to make agricultural machinery or spare parts so long as pig iron has to pay a higher rate

than the machinery itself. In the case of irrigation plant the difference in favour of the manufactured article as against the raw material amounts to 50 per cent. On a typical piece of steel construction, it is calculated that the additional cost of manufacture in Johannesburg, taking into account higher wages, freight on waste, interest on freight paid on stocks held, etc., works out at £2 5s. per ton as compared with the cost of turning out the same requirement at Durban, and that on a contract representing a total outlay of £800, it would constitute a hardship on the inland manufacturer of £93. From the standpoint of the inland industrialist the discrepancy is the more marked seeing that raw iron or steel is of relatively small value as compared with the manufactured product, can be easily handled and carried in full truck-loads, and is not liable to damage.

## REVIEW.

*Modern Mine Valuation.* By M. H. Burnham. 160 pp., tables and diagrams. Charles Griffin & Co.; London. 10s. 6d.

Mining is essentially an operation in which the element of risk preponderates, and upon this ground there are many engineers of standing who do not agree with Mr. M. H. Burnham, the author of "Modern Mine Valuation," that the value of a mine can be expressed in mathematical terms. This is what Mr. Burnham has, in a way, attempted to do, although no one understands better than he how much chance has to do with the success or failure of a mining venture. At the same time, even the probabilities of mining are susceptible of some degree of calculation, and in the book under review we find it explained how far mathematics, combined with an intelligent appreciation of all existing circumstances, can lead us to a reliable estimate. The book is well worth the study of engineers who have to deal with problems of mine valuation, for although the data and processes illustrated are not of universal and indiscriminate application, a consideration of the views upon which they depend cannot fail to conduce to sound thinking and still more to cautious methods. Our readers will probably remember the interesting contributions to *The Mining Magazine*, which were the foundation upon which the present volume has been constructed. The discussion to which the articles gave rise has evidently been of material assistance to the author in the preparation of his final rendering of the subject dealt with.

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## Automobile Notes.

### T.A.C. Doings.

The club purpose holding their annual meeting, at the Grand National Hotel, on the evening of the 29th inst., when many important matters will be discussed, and the election of officers for the ensuing year be decided. The report of the club's affairs for the past nine months, which will be submitted to the meeting, has already been circulated, and deals with the growth and general progress of the club; runs and competitions held under its auspices; motor legislation, and roads, etc., etc. The increase in club membership has been gratifying during the period dealt with, and an effort of a co-operative nature is recommended by the committee to induce as many motorists as possible to become members, and so strengthen the club's finances and enable the Association to enter upon a wider field of activity. The total membership is now given at three hundred and twenty-five, an increase, for the nine months, of some sixty members. The new Licensing Bill, to be introduced to the Union Parliament, has been submitted to the club, through the courtesy of the Minister of Mines, and embodies many of the salient features so long advocated by the club. A suggestion of a commendable nature has been put forward by the committee, that mutual assistance should be rendered the police authorities in the arduous work of traffic control, which, it is pointed out, is becoming increasingly difficult, in keeping with the immense strides of automobilism, and the growth of traffic in Johannesburg. Co-operation, therefore, in the matter of conducting demonstrations to better instruct the pointsmen in their duties, as suggested, cannot fail in being productive of much good. The betterment of the road systems of the country is a matter in which the club has always evinced a whole-hearted interest, and to their untiring efforts much of the headway effected can be traced, not only in the Transvaal, but also in the Province of Natal. The thanks of club members are due, in no small measure, also to the Administrators of the two Provinces mentioned; the General Manager of the South African Railways, and other gentlemen, who have devoted considerable attention to the securing of the much-needed improvement in the roadways of the country. The report concludes by pointing out that, although the work accomplished is not always at once apparent, appreciable good has attended the committee's efforts, and this body, at all times, welcome

suggestions and information which, in turn, may be acted upon in the interests of members. The latter are cordially thanked for the support given during the past year, and a continuance of same is requested for the committee's successors in office.

### The Paraffin Carburettor.

The determination of the oil companies who control the motor fuel market to indefinitely recognise the high prices ruling for motor spirit, in addition to causing the motorist

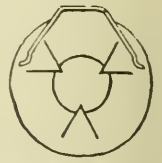


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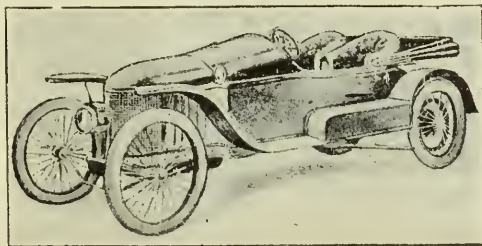
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ranks to seethe with discontent, is turning serious and practical attention to the bi-fuel carburettor. Some writers affirm that the oil officials act in a perfectly legitimate manner in maintaining the high price of their commodity, being under no bounden obligation to reduce the price, and thus raise a very moot question, which need not be discussed. The strategy of motorists, it would appear, can alone save the situation, by placing the controlling parties in such a position that the price of petrol will be reduced in automatic fashion. This can be accomplished by taking advantage of the existence of the vast quantities of cheap fuel, which now constitute a drug on the market. Paraffin, for example, a bye-product in the manufacture of petrol, suggests a substitute, and once the difficulties of carburation are overcome, a complete reversal of the present condition of affairs will be noticed. It is obvious that if paraffin were exclusively used as a fuel, petrol would then be relegated to the position, which the former now occupies, of a waste product. Exhaustive experiments are at present being made therefore, with the result that it is possible to use petrol and paraffin—or similar heavy oil—as a fuel for motor cars, the bi-fuel carburettor which make this possible, saving about forty per cent., and ensuring greater power, mileage and efficiency. When the possibilities of this carburettor become fittingly recognised, there should be no reason why motorists will any longer submit to being the victims of the monopolists, by the high prices they are now compelled to pay for petrol. The cheapening of motoring in addition to its simplifying will mark the era of the new paraffin carburettor.

**British Car Exports and Imports.**

It is expected that the return of British exports in cars for the year 1912 will considerably exceed three millions sterling, and that the imports of foreign cars and parts will fall little short of eight millions for the same period. The imports of motor spirit for the year will show an enormous increase on 1911, and duty will have been paid on some 80,000,000 gallons, representing in value approximately £2,000,000. The substantial increase in the export motor trade is a gratifying feature, but the upward tendency still noticeable, as regard importations of foreign machines and parts, although not of any great proportions, is disquieting to a degree, having in view the decided bid which other countries are making for the British trade. The increase in motor imports, it is understood, is largely due to the marketing of the cheap American car in great numbers. The demand for this machine, however, will receive a considerable check as the cycle-car market is established, and the control now exercised by the promoters of this American car will pass into other hands. We reproduce a sketch of the new cycle-car which is engaging an extraordinary measure of attention at the present time.



A "sociable" cycle-car, in which many British manufacturers are specialising; a machine not altogether unknown to South Africans.

**"Here and There."**

A good example of a serviceable car at a medium price is afforded in the 10-14 h.p. "Austin," and even the ordinary motorist cannot fail to notice the exceptionally good traits embodied in the construction of this machine. The latest model of this type possesses many refinements in detail, all of which tend to enhance its value, and set it on a pinnacle, a leader, so to speak, in the class to which it is confined.

\* \* \* \*

Extract from the *Motor News*, of December 28th, 1912  
 "The price of petrol in South Africa is 3s. a gallon, and this is said to seriously affect the trade in large heavy cars." The demand in Johannesburg, for example, for this spirit, has gone up recently at a rapid rate, and there is nothing more natural than that prices would follow suit. Prices, all the world over, are influenced by precisely the same conditions; so what can the long-suffering motorist expect? Await the new development in carburettors, referred to earlier, is the only evident course!

\* \* \* \*

Out of a total of 3,486 pneumatic tyres at the Paris Salon last month, 789 were Continentals, while of the solid tyres fitted to commercial vehicles, Continentals were responsible for one-third. The four models being marketed by the famous firm, which name their products bear, for 1913, include the three-ribbed square tread, red black steel-studded, and a leather steel-studded non-skid.

\* \* \* \*

Last week a reference was made to glass substitutes for wind screens on motor cars, which gives rise to endless controversy in insurance and other quarters, owing to the fact that the glass wind-screen is a very dangerous accessory on the motor car. A new substitute, it will be of interest to remark, has been marketed, with much promise, to meet

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the difficulty. The composition, which is non-inflammable, is named Exonite, is very light, and does not discolour like other glass substitutes, e.g., celluloid. Possessing all the advantages of glass, this new and interesting composite will doubtless come into considerable vogue in time.

\* \* \* \*

Among many South African motorists opinions are divided in regard to tyre inflation, some advocating constant attention to maintaining high pressure, others inclining to the belief that better results attend tyres working at comparatively low pressures. On analysis, however, it will be admitted that conditions, weight, etc., entirely govern in this important matter. Of course, there are degrees of inflation, and motorists will agree that the owner or driver, as the case may be, must largely decide the question for himself, and effect inflation or depression as circumstances suggest. By way of illustration, the motorist who wishes the best out of his car, in point of speed, will pump his tyres hard to gain this end, but, in the attaining of his object—should the ground traversed be at all rough—will be subjected to violent bumps and tossings, which will more than counteract any good effected contrary. The correct pressure will be arrived at invariably by experience, but tyre inflation is important enough to claim earnest attention from every motorist. A gauge can be recommended, and its use resorted to, should doubt exist in regard to, say, diminution of pressure, and prompt measures taken to restore it.

### The T.A.C. Annual Meeting.

The annual general meeting of the Transvaal Automobile Club will be held at the Grand National Hotel on Wednesday, the 29th of January, when the report of the affairs of the club for the past nine months

will be submitted, and officers for the ensuing year will be elected. At the conclusion of the meeting a smoking concert will be held.


The report states that the average annual increase in membership has been largely exceeded during the past nine months, no fewer than sixty-two new members having been admitted to the club. In this connection special thanks are due to Mr. E. Lezard, who has been the means of introducing a large proportion of these new members. The number of motorists in the Transvaal, however, is constantly increasing, and the committee trusts that in the new year efforts will be made to induce as many as possible to join, and so strengthen the club's finances and enable it to widen its sphere of activities. The total membership at date is three hundred and twenty-five. One of the "blue ribbon" events of the club's programme for years past, viz., the Reyersbach competition, now disappears, as the trophy has been won outright by Mr. D. H. Saker. The Motor Car Licensing Bill, to be submitted to the Union Parliament, has, through the courtesy of the Minister of Mines, been submitted to the club, and now embodies, practically the suggestions advocated by this club for years past. One suggestion advocated by the committee responsible for the work coming under the above heading is that in view of the increasing traffic in Johannesburg, the club should again offer to co-operate with the police authorities in conducting demonstrations to better educate the men entrusted with the duties of point policemen. Considerable attention has, during the past year, been devoted to securing an improvement in roads, not only in this Province, but in Natal also, and the thanks of members are due to the Administrators of the two Provinces, to the General Manager of the South African Railways, to the Superintendent of Natal Roads (Mr. Jameson), to Mr. A. D. Holmwood (who occupies the same position in this Province), to Mr. Kelson, and to the municipal officers of Johannesburg and Pretoria, all of whom have been ever ready to act on the suggestions of the club. The Transvaal Administrator was approached to erect sign posts at the cross-roads of the Transvaal. The lack of Government funds having been mentioned, the club at once offered to contribute towards the cost. This offer having been accepted, the committee obtained two hundred tubes each from the Victoria Falls and Transvaal Power Company and the Rand Mines Ltd. The club is to be congratulated on showing an excess of revenue over expenditure of £32 19s. 10d. for the past nine months, as against the deficit balance which appeared in last year's balance sheet of £110 12s.

### Messina (Transvaal) Development Co.

The mill ran 22.2 days and treated 1,500 tons of ore, producing 298.25 tons of concentrates having an assay value of 45.5 per cent. copper and 150 tons of middlings, average value 10.4 per cent. 621 feet of development was accomplished. The new hauling shaft (No. 5) is now down 149 feet. At the second level the drive west on middle lode has been advanced to 42 feet beyond the dyke. There is still a little glance showing in the face and the average value will be about 4 per cent. At the fifth level the drive on hanging wall portion has been advanced 222 feet east of No. 2 W. winze. Although the face is in hard granite a bunch of good glance is showing in the roof of the drive at 220 feet. At the seventh level the drive west from No. 3 W. winze is now just opposite No. 4 shaft. There is some ore in the face and the average value will be about 10 per cent. over 5 feet. At the eighth level in a winze from No. 6 W. cross-cut at 5 feet down there is some pyritic ore showing the average value being 15 per cent. over 5 feet width. In the footwall portion to the east the raise is up 27 feet and the winze down 24 feet. There is a little reef showing in the raise at 25 feet, the value being 10.2 per cent. over 5 feet width. In the winze at 10 feet and 15 feet depth the values are 13 per cent. and 0.8 per cent. respectively. Connection has just been made between the winze in the south lode and the raise going up from the fourth level. This will allow of more active prospecting on the south lode. The new Babcock and Wilcox boiler is now under steam and the foundation walls for the new mill bins are being pushed ahead. An ice plant has been erected and is now producing about 350 lbs. of ice per day.



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## QUARTERLY REPORTS.

### Brakpan Mines.

The linear development for the quarter amounted to 5,626 feet, of which 3,230 feet were on reef averaging 8.8 dwt. over a reef width of 33.9 inches. Ore hoisted from mine, 208,918 tons; ore from surface dump, 4,280 tons; ore sent to crushing and sorting station, 213,398 tons; percentage of waste sorted out, 15.61 per cent.; average number of stamps running, 150 stamps; net running time, 88,039 days; ore milled, 179,328 tons; milling duty per stamp per 24 hours, 13.58 tons; yield in fine gold, 36,353 ozs.; yield per ton milled in fine gold, 4.051 dwts.; tons treated 178,283 tons; yield in fine gold, 28,211 ozs.; yield per ton treated in fine gold, 3.165 dwts. Yield in fine gold: Mill, 36,353 ozs. (4.051 dwts. per ton milled); cyanide works, 28,211 ozs. (3.146 dwts. per ton milled); total, 64,564 ozs. (7.200 dwts. per ton milled). Revenue, £272,048 (30s. 4.09d. per ton milled); working expenditure, £118,381 (16s. 6.58d. per ton); working profit, £123,666 (13s. 9.51d. per ton); capital expenditure, £6,122.

### Springs Mines.

The north shaft has been sunk a further 353 feet and timbered 353 feet during the quarter, making the total depth 3,110 feet, of which 3,072 feet are timbered. The Bird Reef and Modderfontein series were in turn passed through during the quarter at depths of 2,858 feet and 2,979 feet respectively. The remaining depth to be sunk is in the nature of things impossible of exact calculation, but if normal conditions prevail the reef should be cut at about 3,450 feet, and the date of intersection should be early in March. The original estimate of the depth at which the reef would be intersected will be exceeded owing to reverse faulting which produced a down-throw of the strata estimated at about 275 feet. The south shaft has been sunk an additional 499 feet and timbered 451 feet, making the total depth at the end of the quarter 2,850 feet, of which 2,811 feet are timbered. The Rand Water Board took 132,937,000 gallons of water during the quarter.

### New Goch.

Number of feet driven, sunk and risen, 1,269 feet; ore mined, 99,030 tons; less waste ore discarded, 15,939 tons; ore sent to mill, 83,091 tons. Total running time, 82,158 days. Ore crushed (total tonnage), 82,721 tons; duty per stamp per day, 8,390 tons; yield in fine gold, 12,916.158 ozs.; yield per ton, 3.123 dwts. Cyanide Works.—Sands and slimes treated (equal to 99.994 per cent. of tonnage crushed), 82,716 tons; yield in fine gold, 6,034.981 ozs.; yield per ton treated, 1.459 dwts.; yield per ton (on basis of tonnage milled), 1.459 dwts.; working costs per ton treated, 1s. 5.428d. Total yield, in fine gold, 18,951.139 ozs.; 4.582 dwts. per ton milled. Revenue, £80,367 (19s. 5.171d. per ton); working expenditure, £65,905 (15s. 11.213d. per ton); working profit, £14,461 (3s. 5.958d. per ton); capital expenditure, £213. The working profit is £351 14s. 2d. in excess of that for the previous quarter.

### West Rand Consolidated.

Number of feet driven, sunk and risen, 4,433 feet; ore mined, 111,495 tons; less waste ore discarded, 23,025 tons; ore sent to mill, 88,470 tons; total running time, 79,060 days; ore crushed (total tonnage), 88,070 tons; duty per stamp per day, 11,139 tons; yield in fine gold, 19,106.697 ozs.; yield per ton, 4.339 dwts. Sands and slimes treated (equal to 99.462 per cent. of tonnage crushed), 87,597 tons; yield in fine gold, 11,484.850 ozs.; yield per ton treated, 2,622 dwts.; yield per ton (on basis of tonnage milled), 2.608 dwts.; working cost per ton treated, 1s. 9.200d. Total yield, in fine gold, 30,591.747 ozs.; 6.947 dwts. per ton milled. Revenue, £129,799 (29s. 5.719d. per ton); working expenditure, £103,678 (23s. 6.535d. per ton); working profit, £26,121 (5s. 11.184d. per ton); capital expenditure, £10,427. The working profit shows an increase of £3,021 2s. 8d. over that for the previous quarter.

### Roodepoort United.

Number of feet driven, sunk and risen, 5,142½ feet; ore mined, 113,898 tons; less waste ore discarded, 22,298 tons; ore sent to mill, 91,599 tons. Total running time, 89,558 days. Ore crushed (total tonnage), 92,130 tons; duty per stamp per day, 19,911 tons; yield in fine gold, 12,954.826 ozs.; yield per ton, 2.812 dwts. Sands and slimes treated (equal to 96.710 per cent. of tonnage crushed), 89,099 tons; yield in fine gold, 8,384.048 ozs.; yield per ton treated, 1,882 dwts.; yield per ton (on basis of tonnage milled), 1,820 dwts.; working cost per ton treated, 1s. 4.761d. Total yield, in fine gold, 21,338.874 ozs.; 4.632 dwts. per ton milled. Revenue, £90,554 (19s. 7.896d. per ton); working expenditure, £84,180 (18s. 3.291d. per ton); working profit, £6,374 (1s. 4.605d. per ton); capital expenditure, £8,159. The working profit is £3,682 18s. 6d. less than that for the previous quarter, owing to the low grade of the ore milled. Development of the ground to the east of the Kimberley Roodepoort shaft still continues to disclose satisfactory values, but, as pointed out in the previous quarterly report, some months must elapse before stoping operations can be started up in this particular section.

### Cinderella Consolidated.

Number of feet driven, sunk and risen, 3,836; ore mined, 68,068 tons; less waste ore discarded, 12,508 tons; ore sent to mill, 55,560 tons. Total running time, 89,922 days. Ore crushed (total tonnage), 55,660 tons; duty per stamp per day, 8,598 tons; yield in fine gold, 9,744.996 ozs.; yield per ton, 3.592 dwts. Sands and slimes treated (equal to 99.869 per cent. of tonnage crushed), 55,587 tons; yield in fine gold, 8,489.605 ozs.; yield per ton treated, 3.054 dwts.; yield per ton (on basis of tonnage milled), 3.050 dwts.; working cost per ton treated, 1s. 9.613d. Total yield in fine gold, 18,234.601 ozs.; 6.552 dwts. per ton milled. Revenue, £77,852 (27s. 11.693d. per ton); working expenditure, £68,876 (21s. 8.989d. per ton); working profit, £8,976 (3s. 2.701d. per ton); capital expenditure, £39,650. In the central shaft 68 feet were sunk during the month of October, making a total depth of 2,375 feet. At this point very heavy water was struck, and it became necessary to suspend sinking and cut the pump chamber at the 2,000 feet horizon. This work has now been completed, and the pumps are being installed. It is expected that sinking will be resumed towards the end of the current month. The No. 2 electric winder was completed and brought into use on December 1st, and is running very satisfactorily.

### Van Ryn Gold Mines.

Number of feet driven, sunk and risen, 3,747 feet; ore mined, 129,822 tons; less waste ore discarded, 11,672 tons; ore sent to mill, 118,150 tons; total running time, 84,444 days; ore crushed (total tonnage), 117,230 tons; duty per stamp per day, 10,160 tons; yield in fine gold, 27,737.547 ozs.; yield per ton 4.732 dwts. Sands and slimes treated (equal to 100 per cent. of tonnage crushed), 117,230 tons; yield in fine gold, 11,057.589 ozs.; yield per ton treated, 1.886 dwts.; yield per ton (on basis of tonnage milled), 1.886 dwts.; working cost per ton treated, 1s. 6.710d. Total yield in fine gold, 38,795.136 ozs. (6.618 dwts. per ton milled). Revenue, £165,204 (28s. 2.216d. per ton); working expenditure, £92,264 (15s. 8.889d. per ton); working profit, £72,939 (12s. 5.327d. per ton); capital expenditure, £4,565. The working profit shows an increase of £1,513 18s. 6d. over that for the previous quarter.

### The Meyer and Charlton.

Number of feet driven, sunk and risen, 1,307; ore mined, 45,582 tons; less waste ore discarded, 2,681 tons; ore sent to mill, 42,901 tons. Total running time, 86,242 days; ore crushed (total tonnage), 42,656 tons; duty per stamp per day, 6,595 tons; yield in fine gold, 9,674.349 ozs.; yield per ton, 4.536 dwts. Sands and slimes treated (equal to 100.189 per cent. of tonnage crushed), 42,737 tons; yield in fine gold, 11,142.446 ozs.; yield per ton treated, 5.214 dwts.; yield per ton (on basis of tonnage milled), 5.224 dwts.; working cost per ton treated, 2s. 0.729d. Accumulated slimes.—Slimes treated, 9,600 tons; yield in fine gold, 1,149.600 ozs.; yield per ton treated, 2.395 dwts.; yield per ton (on basis of tonnage milled), .539 dwts.; working cost per ton treated, 2s. 11.497d. Total yield in fine gold, 21,966.395 ozs. (10.299 dwts. per ton milled). Revenue, £93,282 (£2 3s. 8.847d. per ton); working expenditure, £38,496 (18s. 0.595d. per ton); working profit, £54,786 (£1 5s. 8.252d. per ton); capital expenditure, £1,541 3s. 4d. The profit is £834 10s. 7d. in excess of that for the previous quarter. Working costs show a decrease of 5.182d. per ton. The extension of the concentrates plant has been completed. A new Pearn pump is being installed at the 19th level.

### Rand Collieries.

During the period the footage accomplished, confined to the 10th level, was as follows: Cross-cut east, 609½; cross-cut south, 106½; other work, 5½; total, 721½; and, in addition, 157ft. 3in. of diamond drilling. The cross-cut south was stopped in October in order to avoid a duplication of work, as the dyke it was expected to meet was not encountered. The cross-cut east was continued throughout, and is now, as indicated in the boreholes, not far from the reef, which has considerably flattened in dip compared with the upper levels. The ore bin on the 10th level has been timbered and put in use, and some necessary work in connection with the ventilation of the level also done. The ventilation of some of the single quarters, as required by the Mining Regulations, has been finished.

## E. J. MOYNIHAN,

### CONSULTING ENGINEER.

PLANS, SPECIFICATIONS, REPORTS AND ADVICE, MINING EQUIPMENT, STRUCTURAL WORK AND FINANCIAL ADVICE.

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# The Week's Company Meetings.

## RANDFONTEIN GROUP.

### Central Company's Operations.

#### Native Labour Policy.

#### Objection to Tied Hands.

#### Permanent Future Prosperity.

The sixth annual meeting of shareholders of the Randfontein Central Gold Mining Company, Ltd., was held at ten o'clock on January 22nd in the company's offices, Mayfair. Sir J. W. S. Langerman presided, and there were present also Messrs. N. J. Scholtz, F. S. Tudhope, Colin Ferguson, J. H. Tiley, Lionel Cohen, and J. H. Crosby, secretary, representing 3,109,965 shares out of an issue of 4,193,700.

#### Chairman's Speech.

The Chairman, in moving the adoption of the report and accounts, said: The property of the company consists of an area equal to 2,303 mining claims, extending for over seven miles in a continuous line along the strike of the reefs. The Randfontein leader and west reef have been opened up and are being worked throughout. The new reef and the east reef, as well as the wide reef discovered in the course of the year, are also being largely developed on the northern division of the property. During the year the company beneficially extended its mining area by the acquisition from the South Randfontein Deep Company of 153 reef claims situated on the dip of the Stubbs section and adjoining the Porges section to the south-east. We also acquired the machinery and plant, equipment and buildings standing on the property, which, with main shaft sunk to a depth of 1,130 feet and considerable development already accomplished, are valued at £42,624. The consideration given for the claims and equipment was 75,000 reserve shares of the company. This acquisition is a most valuable addition to your property, and we anticipate deriving considerable profit from it, as well as prolonging the life of the mine as a whole.

#### Mills and Stamps.

The reduction works consists of five mills, aggregating 1,000 stamps, together with separate sand and slimes treatment plants in proportion to each mill, the whole being capable of crushing and treating 3,100,000 tons of ore per annum. A Butters slimes filter plant for the treatment of excess slimes is in course of erection and will be running during April next. This will enable us to treat slimes with far better results at a cheaper cost and a minimum of residue value. There are 12 main shafts on the property, all of which are thoroughly equipped with hoists, hoisting engines, pumps, etc. Crushing has been carried on throughout the year at all the five mills, which

ran on an average 752 stamps for 330 days. The reason for the short running of the mills is that during the year four mills on the southern division were thoroughly overhauled and renewed, entailing considerable loss of running time. These mills are now in excellent running order and will cause no further loss of time.

#### Development and Reserves.

The development work carried on during the year consisted of 1,433 feet of shaft-sinking, and 80,012 linear feet of driving, rising, and winzing, at the different stations, besides 321,771 cubic feet of sumps, stations, ore bins, etc. The ore reserves at the close of the year are certified to be 7,600,000 tons, of which 6,350,781 tons are valued at 6.8 dwts., equal to 28s. 10.6d. per ton, and the balance at 3.2 dwts., equal to 13s. 7.1d. per ton. The reserve ore for the year shows an increase of 962,729 over the preceding year's figure. The general manager reports that the machinery and plant has been well maintained, and that the native labour supply during the year was sufficient to meet our requirements.

#### Native Labour Supply.

In connection with the native labour supply, certain criticisms have recently been levelled against our group for not immediately joining the Native Recruiting Corporation which has recently been started by a number of native labour employers among the groups with the object of equalising the distribution of labour among mines according to requirements, reducing labour recruiting fees and augmenting the native labour supply. As the construction placed on our attitude is an entirely false one, and utterly unjustified by the true facts, I wish to refer to the matter to-day. At the last annual meeting of the Randfontein Estates Company I dealt with this matter in the following terms, namely:

Various schemes have been propounded to meet the difficulties, the chief one being a proposal for co-operative recruitment under single control, for which it is claimed that cheapening of the cost of labour to the mines will result. Such a scheme might possibly be the means of effecting a slight reduction in the expenditure which is now incurred by the separate labour organisations, but it certainly possesses no advantages over the present method of recruitment that are likely to result in lower wages and recruiting costs so long as the demand for labour exceeds the supply and the keen competition of employers of labour outside the mining industry has to be encountered. I am, moreover, convinced that the cessation of individual effort on the part of the groups would cause a serious diminution of our already inadequate output of labour and thus aggravate the existing shortage, a disaster to the industry which no minor advantages could repay.

An essential feature of the proposed scheme is the equal distribution of available natives in proportion to the ascertained requirements of each mine. As the percentage of natives employed on the mines on the 31st of December varied from 51 per cent. to 77 per cent. of their complements, and the average 65 per cent., it follows that equal distribution means that those mines enjoying a high

percentage of labour will have their percentage reduced to the average of 65 per cent., and those having a low percentage will have theirs brought up to that average. Our companies having made satisfactory arrangements for securing sufficient labour within the next few months to meet all their requirements, we should be failing in our duty to our shareholders if we entertained a proposition whereby we should relinquish nearly a third of our labour supply to benefit other mines in which our shareholders have no interest. If, however, it could be shown that by the proposed combination a larger supply of native labour can be obtained which will satisfy the requirements of all the mines, then there can be no objection to such a combination, but as I have already stated, the scheme proposed will result in still further reducing our supply. In my opinion no amount of combination on the part of the mines will cause a reduction in the cost of native labour so long as we have a shortage of 30 to 40 per cent., and so long as we have to compete with the urgent demands for native labour of the rest of the Union. While the mining industry was practically the only important competitor in the field of native labour there was little difficulty in filling our requirements, but since the War conditions have changed, and the increasing demands created by the extension of Government works, the ever-increasing population, the expansion of old industries and the springing up of new ones, and the rapid growth of the farming industry, all combine to bring into the field against us competitors whose existence and well-being also depend on a plentiful supply of native labour, and whose demands for a fair share of same cannot be ignored.

#### Successful Arrangements.

The position to-day in principle is exactly the same as it was twelve months ago, and our views thereon have not altered. At the present time the arrangements which we have made for our native labour supply through a successful labour recruiter of substantial means are working successfully, and we are able to have all the natives we require for our present and future operations. No definite offer has up to the present time been made by the Native Labour Corporation to our group to join its combination, but we have within the last few days been seriously approached, and I believe in a day or two such an offer will be made to us, and I can assure you that if the proposals are fair and will secure to us a workable proportion of our complement equal at least to what we at present employ, under our own recruiting arrangements, and at the same time show a saving on the cost of recruiting, such proposals will receive our earnest consideration. We are at all times ready and willing to join in any scheme for the reduction of recruiting costs and native labour wages for the general benefit of the industry, but as trustees for our shareholders we are bound to protect their interests by seeing that they are not placed in a worse position than we are at present by having to sacrifice a portion of our adequate labour supply for the benefit of other mines with inadequate labour supplies, in which our shareholders have no interest, because a shortage in our labour supply would mean a considerable loss to the company, far exceeding any compensating advantages we should receive by joining the combination. Such a position we should be powerless to defend against, because once we relinquish



our present recruiting arrangements and join the corporation we shall not be allowed to recruit independently, whatever we may stand to lose through a shortage in our labour supply. Under our existing recruiting arrangements, however, such a thing cannot happen, because our hands are not tied.

### Milling and Profits.

From the milling operations carried on during the year we recovered 733,780.546 ounces of fine gold, valued at £3,074,471 2s., at a cost of £2,199,311 19s. 2d., equal to 17s. 1.09d. per ton, giving a net profit of £886,399 10s. 5d., including £11,240 7s. 7d. sundry revenue. Out of this profit of £886,399 10s. 5d. there has been appropriated a sum of £318,935 17s. to meet the following standing and other charges for the year, namely: profits tax £73,188 4s., debenture interest £180,000, contributions under Miners' Phthisis Acts and Miners' Phthisis Sanatorium £22,304 4s. 8d., rates, taxes, licences and audit fees £32,535 4s. 10d., and the remainder for depreciation, interest, etc., leaving a net profit of £567,463 13s. 5d. Out of this sum we have further appropriated for capital expenditure incurred during the past year a sum of £239,127 9s. 7d., rendered necessary by our inability, owing to unfavourable market conditions, to realise a portion of the 500,000 reserve shares created on the amalgamation of the company for the purpose of paying all capital expenditure which became necessary in equipping and developing the several mines belonging to the company. The directors were compelled, therefore, to appropriate out of the profits, otherwise available for dividends, the sum of £239,127 9s. 7d. for capital expenditure. Under these circumstances the directors deemed it advisable to declare a dividend of 5 per cent. only. The balance-sheet for the previous year showed that the company owed the Randfontein Estates a sum of £365,185 19s. 2d. This amount has now been liquidated as to £187,133 out of profits earned and £178,053 by 118,700 reserve shares taken in exchange by the Randfontein Estates Company, which I notified you at our last meeting was proposed to be done. Our available cash funds at the close of the year amounted to £369,698 11s.

### Financial Position.

The directors keenly regret that in consequence of not having been able to raise the required sum for capital expenditure they were compelled to pay a smaller dividend than would otherwise have been the case. In the circumstances the directors thought it advisable to lay before shareholders the whole position of the company, and accordingly despatched the following cable to London on the 20th of December, for publication in the newspapers on the 23rd of December:

The directors of the Randfontein Estates Company and the Randfontein Central Company desire to place before shareholders the financial position of the companies, and the result of their operations to the 31st of December, 1912. The Randfontein Estates Company, as shown in its last annual statement, was indebted to its bankers on the 31st of December, 1911, in the sum of £344,500. This amount has during the year been repaid, and there is now a balance to its credit. As regards the Randfontein Central Company, the estimated gross profits of the company amount to £883,000 for the year

1912, out of which the company paid debenture interest amounting to £180,000, profits tax to the Government £70,000, Water Board assessment, miners' phthisis assessment, rates, taxes, claim licences, and lease rents amounting to £54,000, together £304,400, leaving a net profit of £578,600. The whole of this profit under ordinary circumstances would have been available for distribution among shareholders, but owing to market conditions it was found impossible to dispose advantageously of a portion of the reserve shares created for the purpose of meeting capital expenditure; consequently a portion of the profits amounting to £236,650 had to be appropriated to meet capital expenditure during the year, which was chiefly spent in shaft-sinking and further development of the twelve mines and additional electrification of the southern division and the equipment of the Stubbs section. The ore reserves of the company are shown to have been considerably augmented during the year, and now stand at 7,500,000 tons, as against 6,600,000 at the close of the previous year. The result of the policy thus pursued in the development and equipment of the mines will be of considerable benefit in the company's future operations by the further reduction of working costs and increased output of gold. The financial position of the Randfontein Central Company at this date shows that its indebtedness to the Randfontein Estates Company of £365,186, as shown in the last annual statement, has been fully paid, and that its available cash, unrealised gold, and outstandings, amount to about £360,000. The directors have therefore declared a dividend of 5 per cent. on the issued capital of the Randfontein Central Company, payable to shareholders registered on the 31st of December, 1912. This will absorb £209,685 cash out of the available funds of the company amounting to about £360,000. The directors have also declared a dividend of 5 per cent. on the issued capital of the Randfontein Estates Company payable to shareholders registered on the 31st of December, 1912. As the full number of stamps of the large mill on the northern division of the Randfontein Central property will be at work in the course of the next six months, the future profits of the company will be considerably increased.

This information supplied in advance of our annual meeting has been greatly appreciated by shareholders as it conveyed to them the financial position of the company and also gave full particulars of the work done during the current year, as well as a forecast of future prospects.

### Increasing Profits.

As shareholders will have seen from the published monthly outputs, the profits have shown a steady monthly increase. The working costs have also steadily decreased and for November and December stood at 16s. 8d. and 16s. 4½d. per ton. Every endeavour is thus being made to economise in all departments and to bring down the costs still further. The efforts made in improving the position of the company are shown not alone in the reduction of the working costs but are also clearly shown by the increase in the profits which for the last six months of the year amounted to £495,393 as against £391,006 for the first six months—an improvement for the half year of £104,387. The directors have every confidence, not only that this improvement will continue, but that the profits for the year 1913 will far exceed those of the past year. From now onwards our crushing will gradually increase and in a few months' time I am confident the whole of the six hundred stamp-mill on the northern section will be at work. You will, therefore, be able to realise that when in a few months' time we are able to run the whole of our thousand stamps, which, with tube mills,

are equivalent to fifteen hundred stamps, at their full capacity of 3,100,000 tons per annum, the output will be greatly increased as well as the dividends.

### Permanent and Sure.

Since the inception of the company, owing to the magnitude of the operations and the great extent of the property with which we had to deal, the difficulties in the way of establishing a permanent labour supply (which is so vital to the prosperous existence of the company) and the solution of the many problems which present themselves at the outset of the career of this, the largest mining proposition on the Rand, which only time and experience could overcome, the company has had to feel its way gradually in order to build up on a permanent and sure foundation the future prosperity of the company. This has now been achieved, and shareholders can look forward with confidence to the future. I cannot too strongly impress on shareholders how necessary it is for them to fully realise the vast extent of their property, extending as it does for over seven miles of continuous reefs of good average payable value, and that we have the means at our disposal now, after a large expenditure of money and time, to turn the contents of this property to profitable account at the least possible cost of production.

### Northern Reefs.

On the northern division of the property, extending over a distance of four miles, there are five distinct reefs opened up, and being developed, all of them of a payable nature. On the southern division, extending over a distance of three miles, we are at present only working two of these reefs, the Randfontein Leader and the West Reef, and the three other reefs existing and being profitably worked on the northern section we anticipate will also be found on the southern section, and if found will likewise be made to contribute their share towards the prosperity of the company.

The points I wish to impress on shareholders are that they possess a property of great value, containing at the present time five distinct and valuable reefs, that it probably has the longest life of any of the mines on these fields, and that it has the most up-to-date reduction plant to deal with this huge body of ore. In conclusion the directors desire to place on record the valuable services, which have been rendered to the company by the present general manager, Mr. Colin Ferguson, who has by his ability and able management not only succeeded in making the company one of the largest gold producers in the world, but has improved the whole position of the mine by reducing working costs and increasing the profits of the company in a substantial manner. Your directors feel confident that under his able management further improvements will be made during the present year. It will be seen that Mr. Ferguson in his report deals very fully with the whole position of the company, and its operations during the past year. Your directors also wish to record their appreciation of the services of the general manager's staff, who by their energy and close attention to the conduct of the operations of the company during the past year assisted the general manager in the placing of the company in the present sound financial position.

Mr. Lionel Cohen asked: Is the value of the reefs increasing in depth in the northern division?

The Chairman: Yes.

Mr. Cohen: Is it possible to give the value of the new reefs referred to in the chairman's speech?

The Chairman: From the general manager's report it is 6 dwts. over 56 in.

Mr. Cohen: Is it not possible that future communications to shareholders be published in London and Johannesburg simultaneously; I refer especially to the cable despatched to London (but not published in Johannesburg) announcing the estimated results for the year and the declaration of a dividend?

The Chairman: It was entirely owing to an oversight that it was not done, and I regret if any inconvenience has been caused thereby to South African shareholders.

The report and accounts were adopted.

Sir Jan Langerman and Mr. N. J. Scholtz, retiring directors, were re-elected, and the meeting confirmed the appointment of Mr. C. A. Ferguson.

Mr. S. Fleischer and Messrs. C. L. Andersson and Co. were reappointed auditors.

## Langlaagte Estate.

### Better Results in Sight.

The twenty-second annual meeting of shareholders of the Langlaagte Estate and Gold Mining Company, Ltd., was held at 10.30 o'clock on Jan 22nd in the company's offices, Mayfair, Sir J. W. S. Langerman presiding. Sir J. B. Robinson was also among those present.

### Chairman's Speech.

The Chairman, in moving the adoption of the report and balance sheet, said: In moving the adoption of the directors' report and audited accounts for the year ended the 31st of December, 1912, I wish to refer to the work done on the property during that period. The statements before you show that the company's reduction works ran 352 days and treated 635,353 tons of ore, which yielded with the product derived from accumulated slimes and concentrates residues, 174,170 ounces of fine gold. The revenue derived from our operations was £73,212 12s. 8d., and the expenditure £563,167 13s. 8d., showing a profit of £168,044 19s., to which must be added £15,115 11s. 3d. profit derived from estates account and the sale of stands on the Mayfair township, making a total profit from all sources of £183,160 13s. 3d. The cost of production was 17s. 0.18d., and the cost of treating accumulated slimes and concentrates residues 9.31d. per ton. Good progress has been made during the year towards increasing the profits and reducing the working costs. The profits from mining operations showed an improvement for the last half year compared with the first half year of £31,150, and the working costs showed a considerable reduction, being 10s. 6d. in December, against 17s. 5d. average for the first half year. These figures show that every effort is being made to obtain the best results for shareholders, and I trust that this year's operations will show a still further improvement both in profits and working costs. The profit has been appropriated in the following manner: Dividends No. 44 and 45, equal to 15

per cent., £132,125; profits tax, £11,867 2s.; licences, rates, taxes, and audit fees, £7,676 8s. 11d.; contributions to Miners' Phthisis Fund and Miners' Phthisis Sanatorium building, £6,033 3s. 9d.; sundry items, £1,620 8s. 3d.; and towards capital expenditure, £23,833 10s. 4d. The expenditure on capital account during the year was £30,699; of this amount £22,482 was ordinary capital expenditure, that is shaft sinking, etc., and the balance, £8,217, extraordinary capital expenditure, comprising hoists and pumps for underground plant and slimes plant extension, waste rock haulage, compound extension, and native change house, and piping for water service from Block B to Langlaagte Estate. To meet capital expenditure the board disposed of 17,000 reserve shares, realising £25,500. Our cash funds at the close of the year amounted to £105,541. An interim dividend, absorbing £43,475, was declared for the first half of the year, and paid out in August last. A further dividend of 10 per cent., absorbing £83,650, was declared in December, and will be paid during February, making a total of £132,125 distributed among shareholders for the year.

### Development Results.

The year's development work consisted of 950 feet of shaft sinking, and 10,804 linear feet of rising, driving and winzing, etc., besides 70,010 cubic feet of stations, etc. The ore in sight at the 31st of December is estimated at 1,370,639 tons, of which 654,132 tons are main reef and 716,507 tons south reef. This shows an increase of 89,332 tons compared with the previous year's ore reserves. I am glad to say that our native labour supply has been ample for all our requirements throughout the year. The negotiations with the Government for the acquisition of 43 claims on the dip of the Block B mynpacht of your property referred to by your Chairman at our last annual meeting, have now been successfully concluded, and an agreement has been come to with the Government whereby the company acquires these claims for ten annual payments of £4,690 each. This acquisition is a most valuable one for the company, as it will materially prolong the life of the mine. With regard to the mining prospects of the company for the future, at our last meeting you were informed that our mining operations on the Block B were conducted in a poor zone, but I then expressed the hope that better grade rock would later on be opened up. It is gratifying to notice from the manager's report that "the poor zone which was encountered during last year has been practically got through, as ore of a much higher grade has been developed during the past six months under review, and both main and south reefs have a much better appearance as well as values." We may therefore look forward with confidence to much better results for this year. In conclusion, I wish to record the board's appreciation of the good work done by the general manager and his staff in forwarding the company's interests during the past year.

The report and accounts were adopted.

Sir J. B. Robinson, the retiring director, was re-elected, and the meeting confirmed the appointment of Mr. C. A. Ferguson as a director.

The auditors, Mr. S. Fleischer and Messrs. C. L. Andersson and Co., were reappointed.

## Randfontein Estates.

### Pushing on Development.

The twentieth annual meeting of shareholders of the Randfontein Estates G.M. Co. was held at 11 o'clock on Jan. 22nd in the company's office, Mayfair, Sir J. W. S. Langerman presiding. Sir George Abu and Mr. S. C. Black were among those present.

### Chairman's Speech.

The Chairman, in moving the adoption of the report and accounts, said: The capital of the company now stands at £3,001,548, being an increase of £90 since last returns, arising through the conversion of debentures to the amount of £200. The option given to debenture holders to convert their debentures into shares of the company expired on the 1st of March last. Before that date representations were made to the board of directors by both shareholders and debenture holders to extend the option for a further period, but it was found that legal difficulties stood in the way of the directors agreeing to the proposal. No change has occurred in the property of the company since last reported. It consists of eight freehold farms, in extent 31,726 acres, two mynpachts, 1,726 mining claims, 18 bewaarplaatsen, 8 machine stands, residential stands, township, water-rights, reservoirs, machinery and plant, buildings, etc. From the report of the manager of our electric power works you will notice that the operations during the year have been entirely successful. The total capacity of the power plant is 20,000 kilowatts, equal to 26,800 horse power at the central power station, and there are eleven sub-stations the total capacity of which amounts to 23,500 kilovolt amperes, and a transmission system of about forty-two miles of high tension underground cable. During the year under review the output was 81,261,239 units, which was sold to the Randfontein Central Company at a profit. The cost of production was .246 of a penny per unit. It is satisfactory to note that no total stoppage occurred throughout the year, and only on four occasions was power cut off from certain sections of the mines, the total time thus lost amounting to merely one hour fifteen minutes for the year.

### Shares and Debentures.

The shares and debentures held by the company amount to £7,992,861 15s. 8d., an increase of £178,099 10s. over last year's figures, arising from the acquisition of 113,700 Randfontein Central shares in exchange for the indebtedness of that company to us at the 31st of December, 1911, which you were informed at last meeting would be extinguished in that manner. From the accounts before you it will be seen that the financial position of the company is as follows: The total amount available for appropriation is £578,619 17s. 2d., made up of the surplus of revenue over expenditure for the year under review £221,859 9s. 3d., and the balance carried forward from the 1911 account £356,760 7s. 11d. Of this amount £197,276 19s. 2d. has been appropriated as follows: For the cost of the 113,700 Randfontein Central shares, to which I have already referred, £178,099 10s.; for the payment of licences, rates, taxes and audit fees, £5,524 17s. 5d.; for depreciation, £2,932 10s. 11d.; and the remainder for sundry other items, leaving a credit balance at 31st of December of £381,343 18s., out of

which the directors have declared a dividend of 5 per cent. for the year. The cash funds at the disposal of the company at the close of the year amounted to £147,027. In connection with the dividend declared your directors considered it advisable to transmit a cable to London on the 20th of December last, and which was published in the newspapers there on the 23rd of December. (This cable has been given in the report of the Randfontein Central meeting.) The giving of such full details in the cable has been greatly appreciated by shareholders residing in Europe, as it conveyed to them the exact financial position of both the Randfontein Estates and the Randfontein Central Companies. It also gave full particulars of the work which has been done by the company during the current year, as well as the future prospects of the properties when the whole of the 600 stamp mill is at work. This we anticipate will take place within six months from the beginning of this year.

**Development Results.**

The development of the mines has been pushed on as rapidly as possible. The ore which has already been developed, amounts to 7,600,000 tons. You will therefore be able to realise that when we are able to run the whole mill at its full crushing capacity of 3,100,000 tons per annum, which will be in a few months' time, the output will be greatly increased, and the company will then be in a position to pay much larger dividends. As you are aware, the welfare of this company is largely bound up with that of the Randfontein Central, and I am therefore pleased to be able to inform

you that the operations of that company for the past year have been of a successful nature; the profit for the last six months of the year was £495,393, as against £391,006 for the first six months, being an increase of £104,387, equal to 26.7 per cent. The directors have every confidence, not only that this improvement will continue, but that the profit for the coming year will far exceed that of the past year. Indeed, were it not for the necessity of appropriating a large portion of the profits actually earned by the company during the year to meet capital expenditure, which should have been raised independently by the sale of 500,000 reserve shares created on the amalgamation of the company for the purpose of paying for all capital expenditure which became necessary in equipping and developing the several mines belonging to the company, a larger dividend than that declared would have been paid. Full details of the operations for the year of the Randfontein Central will be furnished to shareholders in this company, so that they may be able to form their own opinion as to the value of the company's interest in the Central Company. Meanwhile, the directors have no hesitation in recording their opinion that an era of prosperity for the Randfontein Group is now opening up, and that those shareholders who have steadfastly stood by the company in the past will not be disappointed in its future.

**Date of Meetings.**

Mr. Lionel Cohen said he had been asked by a large number of shareholders to suggest that a special

general meeting should be called for the purpose of amending the articles of association with the object of holding the annual meetings at a later date in the year, so that shareholders in Europe would have an opportunity of studying the reports and accounts.

The Chairman stated that the same question was raised at the last annual meeting, and the reply he then gave was that the directors would take the matter into consideration. The question and the answer were circulated among about twenty-five thousand shareholders, and not a single shareholder had written or signified his desire to have the meetings later as suggested. If there had been any evidence that such a desire existed among shareholders the directors would have given the proposal the consideration it deserved. In the circumstances, however, nothing had been done, and he could not accept the proposition at the present moment. But the request and the reply now given would again be circulated among shareholders, and if a consensus of opinion were shown in favour of the proposition it would be favourably considered by the board.

Mr. Cohen said he represented a shareholder in England holding over five thousand shares.

The report and financial statement were adopted.

The retiring director, Mr. F. S. Tudhope, was re-elected, and the appointment of Mr. C. A. Ferguson as a director was confirmed.

Messrs. C. L. Andersson and Co. and Mr. S. Fleischer, auditors, were re-appointed.

**5/-**

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**THE RAZOR OF RAZORS.**



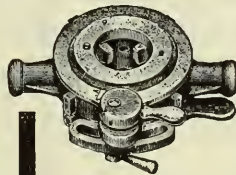
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119/120, London Wall,  
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**THIS  
IS  
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**Pipe  
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**The right tool  
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No matter where you need a pipe-threading tool and no matter for what purpose you use it, you will find the right tool for your particular use among the celebrated

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**Hand Power Motor.**

From the splendid "Bulldog" hand-operated Die Stock (½ in. to 4 inches) to our No. 308 A, driven by belt or by electric motor, with a capacity for 8 inch pipe, each tool is made as simple, durable, and mechanically perfect as 20 years of experience can make them. Engineers in every civilized country know the Oster line.

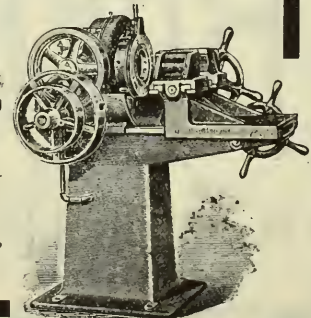
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For AIR, STEAM, GAS,  
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Wood is kept from decaying, metal from rusting, both are protected from the effects of acids, fumes, etc., by

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Over 20 years of practical tests have proved it to be the greatest preservative Paint discovered.

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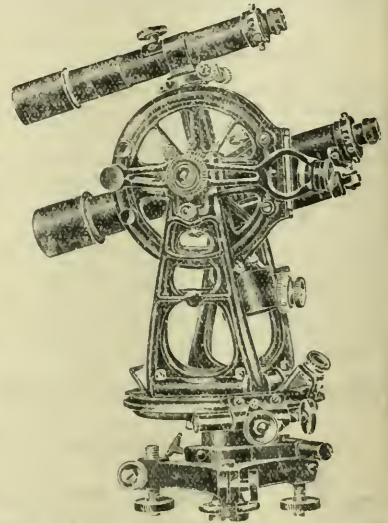
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IN ALL QUALITIES AND FOR EVERY PURPOSE.

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# Bread for Native Compounds.

## HOBBS & BENNETT,

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*Special Plant Installed. :: Motor Delivery.*

**Our Motto: "Quality, Weight & Punctuality."**

Any size of Loaf made to suit your requirements.  
Let our Representative call on you. with Samples  
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**Our Address - - Nursery Road, FORDSBURG.**

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*OPERATING ON THE RAND*

### Have Proved that

THE BUTTERS' PROCESS INCREASES PROFITS  
with the result that THREE MORE Large Plants  
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Randfontein Central G.M. Co., Ltd., Pumping Plant	...	...	for 1,500 tons per day.
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# CRADOCK'S PATENT fabric woven PIPE LINING

Intended for Mines SANDFILLING purposes  
and the conveyance of liquids or semi-  
liquids of an abrasive or corrosive character.

**THE BEST AND MOST DURABLE LINING FOR PIPES.**

Pipes of all sizes supplied,  
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DURBAN to LONDON Fortnightly  
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LONDON to DURBAN every Ten Days.

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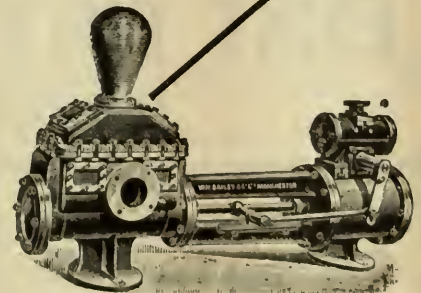


Fig. 1a.—"Davidson" Boiler Feed Pump.  
For any Pressure with Pistons or Rams.

BAILEY'S "DAVIDSON" PATENT

### STEAM PUMP

OF HIGHEST ECONOMY.  
HOLDS THE RECORD FOR DURABILITY.

Uses 50 per cent. less Steam than Ordinary  
Pumps. Absolutely Positive in Action.  
Horizontal or Vertical.

The Pump with the simplest Slide Valve!

For Air Lift Pumping Plants, Deep Well Pumps,  
Steam Traps, Valves, Recorders, Turnstiles, etc.,  
see Special Lists.

MANUFACTURERS

**W. H. Bailey & Co., Ltd.,**  
ALBION WORKS.

Manchester, England.



Fig. 50d.—"Davidson"  
Economical Boiler  
Feed Pump.





## Ferreira Deep, Limited.

(Incorporated in the Transvaal.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Eleventh Ordinary General Meeting of Shareholders for the year ended 30th September, 1912, will be held in the Board Room, The Corner 11, Johannesburg, on WEDNESDAY, 29th JANUARY, 1913, at 11 a.m., for the following business:—

1. To receive and consider the Balance Sheet and Accounts for the year ended 30th September, 1912, and the Reports of the Directors and Auditors.
2. To elect two Directors in the place of Mr. E. A. Wallers and Mr. H. A. Rogers who retire in accordance with the provisions of the Articles of Association, but are eligible and offer themselves for re-election.
3. To determine the remuneration of the Auditors for the past audit and to appoint Auditors for the ensuing year.
4. To transact any other business which may be transacted at an Ordinary General Meeting, or which is brought under consideration by the Report of the Directors.

The Share Transfer Books of the Company will be closed from the 29th January, 1913, to the 4th February, 1913, both days inclusive.

Holders of Share Warrants to Bearer who desire to be present or represented at the Meeting, must deposit their Share Warrant (or may as their option produce same), at the places and within the times following:—

- (a) At the Head Office of the Company in Johannesburg, at least twenty four hours before the time appointed for the holding of the Meeting;
- (b) At the London Office of the Company, No. 1, London Wall Buildings, London, E.C., at least thirty days before the date appointed for the holding of the Meeting;
- (c) At the Office of the Compagnie Française de Banque et de Mines, 20, Rue Taibout, Paris, at least thirty days before the date appointed for the holding of the Meeting;

and must otherwise comply with the "Conditions as to the issue of Share Warrants or Bearer Shares" now in force.

Upon such deposit or production a Certificate, with Proxy Form, will be issued under which such Bearer Warrant holder may attend the Meeting either in person or by proxy.

By Order of the Board,  
RAND MINES, LTD., Secretaries.  
S. C. STEIL, Joint Secretary.

Head Office: The Corner House,  
Johannesburg, Transvaal,  
10th December, 1912.

50709

## Nourse Mines, Limited.

(Incorporated in the Transvaal.)

### DECLARATION OF DIVIDEND No. 17.

NOTICE is hereby given that an Interim Dividend of Ten per cent. (two shillings per share) has been declared by the Board for the half-year ending 31st January, 1913.

This Dividend will be payable to all Shareholders registered in the Books of the Company at the close of business on 31st January, 1913, and to holders of Coupon No. 17, attached to Share Warrants to Bearer.

The Transfer Books of the Company will be closed from the 1st to the 7th February, 1913, both days inclusive.

The Dividend will be payable to South African Registered Shareholders from the Head Office, Johannesburg, and to European Shareholders from the London Office, 1, London Wall Buildings, London Wall, E.C., on or about the 7th MARCH, 1913.

Holders of Share Warrants to Bearer are informed that they will receive payment of the Dividend on presentation of Coupon No. 17, at the London Office of the Company.

Coupons must be left four clear days for examination, and will be payable at any time on or after the 7th MARCH, 1913.

By Order of the Board,  
RAND MINES, LIMITED  
(Secretaries),  
S. C. STEIL,  
Joint Secretary.

Head Office: The Corner House,  
Johannesburg, 15th January, 1913.

53653

## DEPARTMENT OF MINES.

THE following Government Notice is published for general information.

H. WARINGTON SMYTH,  
Secretary for Mines.

Office of the Minister of Mines, Pretoria.

No. 71. [15th January, 1913.

LEASE OF MINERAL RIGHTS ON PORTIONS OF GOVERNMENT FARM HOUGGENOEG No. 42, BARBERTON DISTRICT, UNDER SECTION FORTY-SIX OF ACT No. 35 of 1908 OF THE TRANSVAAL.

NOTICE is hereby given that the Government is prepared to receive applications for the lease of the exclusive right to mine precious metals on portions of the farm Houggenoeg No. 42, Barberton District, demarcated by beacons, and in extent 92,9820 claims, the positions of which are shown on a diagram, which, together with the draft form of lease, may be seen at the Office of the Minister of Mines, Pretoria, the Office of the Government Mining Engineer, New Law Courts, Johannesburg, and the Office of the Mining Commissioner, Barberton.

2. The lease shall be for a period of ten (10) years, with the right of renewal, and shall not be ceded without the consent of the Minister of Mines.

3. Every application shall be in writing, and must be in the hands of the Secretary for Mines, Pretoria, not later than the 17th day of March, 1913, and must be marked on the outside "Tender, Sheba Queen."

4. The lease shall contain the provisions, in so far as they are applicable, set forth in the lease entered into by the Government on the 27th January, 1910, and published in the *Transvaal Government Gazette* of the 11th February, 1910, under Government Notice No. 145 of 1910, with the exception of Clauses 3, 5, and 11 thereof, for which the following shall in effect be substituted:—

- (a) The lessee shall provide for the purposes of the lease within two (2) months after acceptance of tender, such working capital as his tender may indicate.
- (b) The lease may be transferred by the lessee to any other person or to a company on obtaining the consent of the Minister of Mines, which shall not be unreasonably withheld.
- (c) The lessee shall pay to the Government in consideration of the rights granted such percentage of the annual profit as his tender may indicate, but such percentage shall not be less than that provided for in the Mining Taxation Act, No. 6 of 1910.

Further, the lease shall be subject to the provisions of the Profits and Base Metals Act, 1908, of the Transvaal (No. 35 of 1908), in so far as applicable, and shall contain such other terms and conditions as may be arranged between the Government and the lessee.

5. Each application shall be accompanied by a deposit of or banker's guarantee for two hundred and fifty pounds (£250) sterling, which amount may be forfeited to the Minister of Mines if the applicant fail to furnish the working capital specified in his tender within two (2) months after acceptance of same.

6. Each applicant must satisfy the Government as to his ability to provide the necessary funds for exploitation, and must indicate his general scheme for the working of the property, and furnish full particulars of his financial proposals.

7. The consideration to be quoted by the applicant as payable to the Government for the lease shall take the form of a percentage of the annual profit (as defined in section four of the Mining Taxation Act, No. 6 of 1910), and the applicant must tender to pay a percentage of the annual profit not less than that provided for in the said Act.

8. The Government does not bind itself to accept the highest or any offer.

## Glynn's Lydenburg, Limited

(Incorporated in the Transvaal.)

### Declaration of Interim Dividend No. 23.

A DIVIDEND of 10 per cent. (2/- per share), has been declared by the Board, payable to all Shareholders registered in the books of the Company at the close of business on FRIDAY, the 31st of January, 1913.

The Transfer Books will be closed from 1st to 7th February, 1913, both days inclusive.

The dividend will be payable to South African Shareholders from the Head Office, Johannesburg, and to European Shareholders from the London Office, No. 1, London Wall Buildings, E.C., on or about 4th March, 1913.

By Order of the Board,  
W. RUSSELL SLACK, Secretary.

Head Office:  
The Corner House,  
Johannesburg, 10th January, 1913.

53263



# ECONOMIC AIR DRILLS. THE "CLIMAX."

May we assume that

## AIR CONSUMPTION PER FOOT BORED

interests you, and **not** so much air consumed per minute, irrespective of work done?

It is a matter of **Cause and Effect**: If you use a given quantity of air in a well-constructed Drill, you get the effect in inches drilled; it is also equally true that if you **unduly cut down** the air consumption, the good effect is lost, and you do not get the same number of inches drilled.

*Have you seen our range of light, all steel, Stope Drills?*

Viz:— 3" Cylinder diameter, 180 lbs. weight.  
2 3/4" " " 175 " "  
2 1/2" " " 165 " "

All of these are **very fast drilling machines**, and we guarantee the air consumption for inches drilled is equal to the best, and that being all steel they cost from **20% to 50% less in maintenance charges** than any other drills upon the market. We will give you **FREE TRIALS** to prove this.

**MAKE ENQUIRIES!** The above Machines are doing good work in the African mines.

Proprietors, Makers and Patentees:

**R. STEPHENS & SON,**  
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# STEWARTS AND LLOYDS (South Africa), LTD.

(Incorporated in Great Britain.)

## L & L TUBES & FITTINGS. L & L

Electrically Welded Steam Joints a Speciality.

All Classes Flanged and Screwed Joints.

### VALVES.

Hopkinson's Steam Valves  
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We are in the position to  
Quote for all Classes of  
TUBULAR  
CONSTRUCTION WORK.

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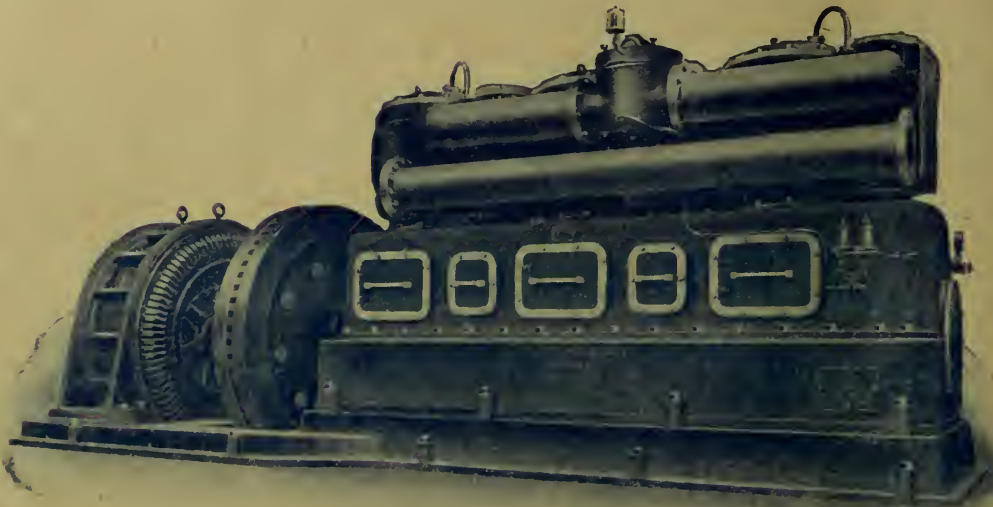
"National" Gas, Oil and Petrol Engines.  
"Mather & Platt's" High and Low Lift  
Centrifugal Pumps.

"Climax" Brass Cylinders  
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Power Heads, Etc., Etc.

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## Air Compressors.



Manufactured by ALLEY & MacLELLAN, Limited,  
GLASGOW.

**STEAM, ELECTRIC AND BELT DRIVEN.**

**ALL SIZES from 20 to 6,000 cubic feet per minute.**

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P.O. BOX 619.

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