

# THE MINERAL INDUSTRY

ITS

STATISTICS, TECHNOLOGY AND TRADE

DURING

1914

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## PRECIOUS STONES

BY GEORGE F. KUNZ

The 7 months of the year 1914 until the declaration of war showed a condition that seemed favorable to improvement in the precious-stone industry. Then the stagnation resulting from the war completely changed the whole aspect of affairs in a very short space of time. This was mainly due to the almost entire cessation of any demand from the European countries, as well as to a much modified consumption on the part of the United States. The demoralization reached its height with the fall of Antwerp and the complete cessation of the diamond-cutting industry there, which before the war equalled if not slightly exceeded in volume that of the mother of this industry, Amsterdam. Then the fact that many of those engaged in the commerce of precious stones in England and France were of German or Austrian origin, or had names that indicated their race, caused the closing of their places, the proprietors being compelled to flee or be interned in the respective countries in which they had lived. By a strange coincidence, many of the Hebrews left for Portugal where the diamond-cutting industry of the early eighteenth century was so prosperous, and whence they had been driven to Holland through religious persecution.

Secondly, the calling to the colors of a considerable number of men in the profession by the countries at war, has of course seriously hampered many establishments, making it impossible to carry on business as it was formerly done. Moreover, in Germany, there was the difficulty of shipping goods to the outer world from Oldenburg, Hanau, and other places, as well as from the Bohemian region where the cutting of gem stones has flourished. Even when shipments were made by way of Holland, or by way of Sweden, this meant delays, additional expense, risks, and interferences with a well-organized commerce.

In spite of these many drawbacks, however, the demand for the better class of stones is still sufficient to maintain prices, a result due in some degree, of course, to the diminished output. The diamond in its finer qualities is receiving more appreciation than ever. Sapphires may be said to be enjoying royal favor, and fine emeralds are quite as much in vogue as ever before. There has been an increased working of the American gem mines in Montana, and hence the production of American gem stones has been quite as great as in any previous year. The in-

trinsic value of pearls has been demonstrated by the maintenance of their value even at a time when almost the entire world had declared a moratorium. Here the notable falling off in the supply from some of the principal fisheries has for some time past operated to keep prices at a high level.

Among the more recent designs for bringing out the beauty and effectiveness of precious stones may be noted the use of a tint of black along the edges of the stone; for instance, a tiny mortised or mitered edging to the center of diamonds, or other gems, this onyx effect being used very successfully in many cases.

Rock crystal engraved and encrusted with a delicate tracery in some dull color, or surrounded by small diamonds in attractive grouping and setting has been used to a great extent.

The prevailing favor accorded to block tints for costume and accessories by the feminine world, in the autumn and winter seasons at least, may be assumed to have some connection with the prevalence of mourning in Europe, for woman's invincible tendency to emphasize the element of daintiness and beauty wherever possible has been displayed in the more graceful and even artistic and stylish effects recently given to mourning garments, in marked contrast to the more severe and even unlovely fashions of former days.

A novel form of diamond bordering for emeralds, rubies, or sapphires. consists of the adjustment at the sides of a square-cut colored stone, of four narrow, oblong, table-cut diamonds, each one of these extending along one of the sides of the central colored stone. The contrasting effect is very striking and beautiful, as the diamond material is in much closer and more intimate contact with that of the central stone than is the case where the latter is surrounded by a cluster of small faceted diamonds.

A special feature of this report will be a study of the diamond-mining industry in South Africa and elsewhere, embracing many valuable data on the organization of the numerous diamond-mining companies.

*Markets and Imports.*—The following official figures giving the total imports of precious stones for the years ending June 30, 1911–1914. show the falling off in the year 1914, before the European war affected the market, due to the higher tariff rates, which became operative after October 3, 1913.

While there was a slowing up during the first 7 months of the year. the decisive effect of the war is shown by comparing the total for the first 6 months with that for the last 6 months, the figures being, respectively, \$13,558,722 and \$6,206,265, of which latter amount \$2,160,161 represents imports for the month of July before the beginning of hostilities.

PRECIOUS STONES

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	1911.	1912.	1913.	1914.
Diamonds, uncut, including miners', cutters', and engravers', not set. Free..	\$9,290,943	\$9,833,513	\$12,339,553	\$4,956,014 (a)
Diamonds, uncut. Dut. ....				3,151,833
Diamonds, cut but not set. Dut. ....	24,407,295	24,537,150	27,213,047	17,795,099
Pearls and parts of, not strung or set. Dut.	1,140,293	2,089,313	5,806,673	4,263,933
Other precious stones, uncut. Free.....	182,010	112,558	79,158	23,085 (b)
Other precious stones, uncut. Dut. ....				14,000
Other precious and semi-precious stones, cut but not set. Dut. ....	5,622,596	3,544,180	2,771,950	2,565,819
Imitation precious stones. Dut. ....		1,181,045	1,319,464	1,192,897
Totals.....	\$40,633,137	\$41,297,759	\$49,529,845	\$33,963,140

(a) Including diamonds uncut from July 1 to Oct. 3, 1913, inclusive. (b) From July 1 to Oct. 3, 1913, inclusive.

For the calendar years 1911-1914 the following figures of precious-stone imports are reported:

	1911.	1912.	1913.	1914.
Diamonds, uncut. Free.....	\$9,854,152	\$9,863,770	\$11,616,286	.....
Diamonds, cut. Dut. ....			956,576	\$2,976,227
Diamonds, cut but not set. Dut. ....	25,705,563	22,876,042	24,886,133	12,022,146
Pearls and parts of, not strung or set. Dut.	1,387,689	5,139,406	5,004,489	2,142,221
Other precious stones, uncut. Free.....	109,241	115,812	47,716	.....
Other precious stones, uncut. Dut. ....			9,459	32,596
Other precious and semi-precious stones, cut, but not set. Dut. ....	4,519,963	3,342,219	2,740,804	1,630,715
Imitation precious stones. Dut. ....	587,256	1,215,471	1,299,145	961,082
Totals.....	\$42,163,864	\$42,552,720	\$46,560,608	\$19,764,987

Thus in the first 7 months of the year (Jan.-July, inclusive), when trade in precious stones is least active, the average monthly imports were \$2,245,550, while in the last 5 months (Aug.-Dec.), during which period the largest importations are usually made, the monthly average had fallen to \$809,221, not 40 per cent. of that of the former months, and probably part of this represented the filling of orders given prior to the declaration of war.

The fact that the value of the imports for February, 1915, was nearly \$2,000,000 (\$1,884,903)—almost double the figures for the previous month, \$1,035,917—shows the strong tendency to recovery even in the midst of the war, and gives us an indication of the rapid increase sure to follow the conclusion of peace.

The special degree in which the diamond trade of Amsterdam has suffered since the beginning of the war is clearly brought out in the comparative figures of exports from Amsterdam to the United States in 1913 and 1914. While the totals of all exports show a falling off of \$2,367,542 in the last-named year as compared with the previous one, the decrease in diamond exports alone largely exceeded this, being

\$5,465,484. The respective figures for 1913 and 1914 as invoiced at the United States consulate are as follows:<sup>1</sup>

	1913.	1914.
Cut.....	\$10,085,701	\$5,157,838
Uncut.....	985,161	447,540
	\$11,070,862	\$5,605,378

The immediate effects of the war are more strikingly shown in the following statement, giving the exports to the United States for the first 7 months and the last 5 months of the 2 years respectively, the heavy exports in the early part of 1913 being, of course, largely due to the impending increase in tariff rates.

	1913.		1914.	
	Jan.-July.	Aug.-Dec.	Jan.-July.	Aug.-Dec.
Uncut diamonds.....	\$728,057	\$257,104	\$278,833	\$168,767
Cut diamonds.....	7,900,426	2,185,275	4,497,216	660,623
	\$8,628,483	\$2,442,379	\$4,776,049	\$829,329

Although the exports for the closing 5 months of 1914, covering the war-period of that year, show a decrease of two-thirds in the value of cut and uncut diamonds sent from the port of Amsterdam to the United States, the stagnant condition of the local diamond industry might have led us to expect an even greater falling off; however, the still considerable amount of diamond material exported during this time is stated to have been partly due to a supply brought in by fugitive diamond dealers from Antwerp, who were forced to sell some of their stock at greatly reduced prices.

The disorganization of the diamond-cutting industry in Amsterdam as far back as the early part of 1914 appears from the fact that out of 9800 members of the Amalgamated Union of Dutch diamond workers, more than 50 per cent., or over 5000, were out of work at that time, the average number of unemployed workers never falling below 4000 during the ante-bellum part of the year. This important beneficial organization embraces almost all of the Dutch diamond workers. At the beginning of the war the proportion of unemployed rose to 80 per cent., the remainder only having employment for a part of their time.

A little has already been done to revive the diamond-cutting industry in Antwerp. At the outbreak of the war the German and Austrian

<sup>1</sup> See Consul D. I. Murphy's report of April 10, in Supplement to Commerce Reports, June 11, 1915. No. 9a, pp. 3, 4-6.

diamond dealers were practically driven from the city, but many of them returned after the German occupation. The German civil authorities in Antwerp have accorded some special privileges to the proprietors of diamond-cutting works with the result that this industry has been resumed to a limited extent. Of course wages have been greatly reduced. Where a wage of 75 francs was paid weekly the same worker has to be content with a weekly stipend of 28 francs. The demand is confined principally to the smaller stones, such as the half-carat diamond, locally called *demi-gris*, for which there is still a fairly good market in Germany, Austria, Italy and the United States.

In London, Hatton Garden, long known as a center of diamond interest, shows considerable activity, principally due to the presence here of many expatriated Belgian diamond cutters. From Amsterdam the report comes that in March of this year (1915) about 2000 cutters were able to find employment, while some of the small number of Belgian workers in this industry who are still able to find something to do are employed by a few manufacturers in Scheveningen, Holland, who have temporarily set up some small establishments there. They have already combined in a trade association and have subscribed funds for the constitution of a local Diamond Exchange.<sup>1</sup> Although these efforts are necessarily on a small scale, still they testify to the vitality of the industry and serve to show that as soon as the pressure of hostile influences shall have been removed, the diamond industry will be ready to reassume its important place in the industrial life of Antwerp.

An import duty is soon to be imposed in Canada on loose diamonds, which have heretofore been imported free. This duty is adjusted so as to favor English exporters, who have to pay only 5 per cent. of the value of the stones, while diamonds from Amsterdam or other non-British ports are dutiable at 7.5 per cent.

#### DIAMONDS<sup>2</sup>

*Africa.*—In reviewing the state of diamond mining in 1914–1915, it seems that the following list would be of interest, as it gives full data regarding the present condition of the mines:

African Diamond Development Co., Ltd., registered July 23, 1913, to acquire options on the Franzport mine near Pretoria and the Spytfontein mine near Kimberley. Capital, £125,000 in 500,000 shares of 5s. each, a few of which have been already issued.

Blaauwboschfontein Diamond Co., Ltd., registered November 18,

<sup>1</sup> See *Jeweller and Metalworker*, March 15, 1915, p. 278.

<sup>2</sup> Much of the data for this section has been obtained from Walter R. Skinner's "Mining Manual and Year Book for 1915;" (29th year of publication), London [1915] 968 pp.

1908, in the Orange Free State as the Blaauwbosch Diamond and Development Syndicate, Ltd.; name changed April, 1910. Owns freehold of 100 morgen (211 acres) on the Blaauwboschfontein farm, leasing the government's four-tenths of the mineral rights. Capital, £24,500 in fully paid shares of £1 each. Dividends, 1911-12, 7.5 per cent.; 1912-13, 67.5 per cent.; 1913-14, 60 per cent. *Quotations.*—1913, high  $6\frac{1}{8}$ , low  $3\frac{3}{4}$ ; 1914, high  $5\frac{1}{16}$ , low 3; latest  $3-3\frac{1}{2}$ .

Consolidated Co., Bultfontein Mine, Ltd., registered in Kimberley, in January, 1888, to take over the properties of the Adamant Diamond Mining Co., Ltd., and the French and Esterre Diamond Mining Co., Bultfontein Mine, Ltd. At present the property, which has been leased in perpetuity to the De Beers Consolidated Mines, Ltd., since July 1, 1889, covers 430 claims in the Bultfontein Diamond Mine, Kimberley, Cape Colony. Capital, £721,500 in fully paid shares of £1 each. The rental paid by the De Beers company is equivalent to an annual dividend of 7.5 per cent. on the capital. *Quotations.*—1911, high  $1\frac{1}{2}$ , low  $1\frac{1}{4}$ ; 1912, high  $1\frac{1}{2}$ , low  $15\frac{1}{16}$ ; 1913, high 28s. 6d., low 26s.  $1\frac{1}{2}$ d.; 1914, high  $1\frac{7}{16}$ , low  $1\frac{3}{16}$ ; latest  $1\frac{3}{8}-1\frac{1}{4}$ .

Crown Diamond Mining and Exploration Co., Ltd., registered in the Orange Free State, November 13, 1908. This company acquired the two freehold farms of the Lace Diamond Mining Co., Ltd.; Driekop No. 630, with an area of 956 morgen, 500 square roods, and Ruby No. 961, area 1378 morgen, 218 square roods, or about 2018 and 2908 acres, respectively. The consideration was £75,000 in fully paid shares. For the 10 months from August 1, 1913 to June 1, 1914 the diamond yield was 21,536 carats from 219,002 loads washed, an average of about  $\frac{1}{10}$  carat per load. There was a net loss of £16,222 on operations for the 18 months ended December 31, 1913. Capital, £125,000 in £1 shares.

De Beers Consolidated Mines, Ltd., registered in Cape Colony, March 13, 1888, with a nominal capital of £100,000, to consolidate the diamond mining properties and interests of the De Beers and Kimberley mines, Griqualand West, Cape Colony. Control of the Koffyfontein Mines, Ltd., was obtained in 1911. One of the important successive stages of the development of this great company was the leasing in perpetuity of the Dutoitspan Diamond Mine (519 claims) in August, 1899, from the Griqualand West Diamond Mining Co., the annual rental being equivalent to a 4 per cent. dividend on the capital stock of this company; its debenture indebtedness of £158,000 was also assumed and has since been paid off. The 291 claims in the Bultfontein mine owned by the Consolidated Co., Bultfontein Mine, Ltd., were leased in perpetuity in September, 1899, for 7.5 per cent. on the capital stock of the original



company, and in November, 1889, the entire property of the Bultfontein Mining Co., Ltd., was bought for £745,454 of De Beers Bultfontein Obligations. The remaining large mine of the De Beers company, the Wesselton mine, was purchased from the Wesselton Estate in December, 1891, for £300,000; in 1900 the company acquired the property of the New Bultfontein Mining Co., Ltd., the total expense of this transaction amounting to £197,862.

At various times other important interests have been acquired by the De Beers company, such as those of the Compagnie Générale with holdings in the Brazilian Canivieras Mines; the Sultan Diamond Mining Co.; the United Diamond Mining Co.; the Spes Bona Bultfontein Diamond Mining Co.; the South African Diamond Mining Co.; the New Gordon Diamond Co., Ltd., and the British United Diamond Mining Co. For the Anglo-African Diamond Co. the sum of £677,500 in De Beers debentures was paid. The latest transaction of this kind has been the acquisition of the Voorspoed Diamond Mining Co., Ltd., the price paid being 12s. 6d. for each share of the Voorspoed, the De Beers company also assuming liability for a loan of £120,000; the cash payment for the shares totaled £253,271. The removal of a troublesome competitor, rather than the earning power of this mining property, was the determining factor with the managers of the De Beers company.

The capital of this great company is now £4,500,000, represented by 800,000 preferred shares and 1,000,000 common shares, each of £2 10s. par value. A cumulative dividend of 40 per cent. is assured to the holders of preferred stock before any dividend can be distributed on the common stock, which is then entitled to the whole remaining dividend distribution. The outstanding debentures of the company bearing interest at  $4\frac{1}{2}$  per cent., amount to £1,635,495. At the outset the capital of £3,950,000 was divided into 790,000 shares of £5 each, the present form of capitalization dating from December 1901, when each holder of a £5 share received in exchange one share of preferred, and one of common stock, the balance of the new stock issued being applied as bonus, and extinguishing the right of life-governors to a share of the profits. The dividend of 40 per cent. on the preferred was paid up to June, 1914, and the following annual distributions have been made in the common stock from 1903:

1903.....	55 per cent.	1909.....	20 per cent.
1904.....	55 per cent.	1910.....	40 per cent.
1905.....	40 per cent.	1911.....	40 per cent.
1906.....	40 per cent.	1912.....	60 per cent.
1907.....	70 per cent.	1913.....	60 per cent.
1908.....	No dividend.	1914.....	20 per cent.

For the current year (1915) the results will certainly be no better than in the year 1908, as of course all mining operations have been suspended. How long it will take to restore things to their former state no one can tell;

in any case the company's record so far speaks for itself, and the future will deal as kindly with it as with other legitimate and well-managed business ventures. The dividends on common stock for the past 12 years, as given above, show average annual dividends of  $41\frac{3}{8}$  per cent., certainly a most satisfactory result. *Quotations.*—1911, preferred, high  $18\frac{1}{2}$ , low  $17\frac{1}{2}$ , common, high  $19\frac{9}{16}$ , low  $17\frac{1}{4}$ ; 1912, preferred, high  $18\frac{1}{8}$ , low  $16\frac{3}{8}$ , common, high  $22\frac{3}{32}$ , low  $18\frac{1}{2}$ ; 1913, preferred, high  $17\frac{1}{2}$ , low  $15\frac{1}{16}$ , common, high  $22\frac{1}{16}$ , low  $17\frac{5}{32}$ ; 1914, preferred, high 17, low  $12\frac{1}{2}$ , common, high  $19\frac{3}{4}$ , low  $10\frac{1}{4}$ ; latest, preferred  $12\frac{1}{8}$ , common  $10\frac{1}{4}$ . This is equivalent to 485 for the preferred and 410 for the common.

Although the Twenty-sixth Annual Report of the De Beers Consolidated Mines for the year ending June 30, 1914, just escaped the paralyzing effects of the world war, it nevertheless reflects a certain falling off in the demand for diamonds as compared with the previous year, one of exceptional prosperity. In that period the amount realized on diamond sales, added to the increased value of diamonds in stock, at cost of production, amounted to £6,297,782, while for the year 1913-1914 the corresponding figures are but £5,446,954. The amount actually realized on sales was £5,123,336; adding to this for sundry receipts from interest and dividends on investments, etc., £228,770, and £497,874 for previous balance, a total of £5,849,980 was attained. Mining expenses for the year were £1,992,628, other expenditures, taxes and depreciation charges, £984,516, and £51,253 was transferred to credit of General Fund, and dividends amounting to £2,050,000 were paid, making in all, £5,078,397, leaving the sum of £771,583, composed of £323,719 added production value of diamonds in stock, and £447,864, balance carried to Balance Sheet.

The diminished revenue did not justify as large dividends on the deferred shares as had been paid in 1913, when the amount of £1,750,000, or 35 per cent., was distributed among these shareholders in dividends and bonus; for the year 1914 the dividends so paid amounted to £1,250,000, or 20 shillings per share. The holders of preference shares received £800,000, as in the previous year.

In the pursuit of their consistent efforts to preserve the stability of the diamond market, the De Beers company was of course a most important factor in the attainment of an agreement among the leading diamond producers at the conference held in London in July, 1914, at which a satisfactory arrangement was attained, soon, however, to be rendered futile by the breaking out of the war. As a result of the negotiations, the De Beers company, through the Diamond Syndicate, acquired diamonds from the German deposits to the value of nearly

£273,000. At the annual meeting held December 29, 1914, Chairman Oats, in announcing this fact, remarked that at the time they had no anticipation that war was about to ensue, to which a shareholder remarked "I am afraid the Germans had."

When the decision was arrived at, early in August, to close down the mines, the company used every endeavor to provide for the necessities of its 2740 European employes, either furnishing them with transportation to some other locality where they could find work, or retaining them in the employ of the company at half-pay for a number of months. In the case of upward of one thousand of the employes, who volunteered for military service, the De Beers company engaged to make good to each one the difference between his pay and one-half of his previous salary. This entails a monthly expenditure of £7000 and may be regarded as not merely a benefaction to the employes, but also in some degree as a free-will offering in aid of the government.

The following table gives the figures representing the average yields of the different mines, the value of the diamonds per carat and the average value per load:

	1912.	1913.	1914.
Wesselton Mine.			
Average yield in carats per load.....	0.29	0.27	0.28
Value per carat.....	45s. 3.12d.	51s. 2.83d.	45s. 7.62d.
Value per load.....	13s. 1.504d.	13s. 10.02d.	12s. 9.33d.
Bultfontein Mine.			
Average yield in carats per load.....	0.41	0.42	0.38
Value per carat.....	40s. 8.243d.	45s. 9.29d.	40s. 10.47d.
Value per load.....	16s. 8.179d.	19s. 2.70d.	15s. 6.38d.
Dutoitspan Mine.			
Average yield in carats per load.....	0.23	0.23	0.21
Value per carat.....	83s. 0.132d.	93s. 0.45d.	84s. 0.9d.
Value per load.....	19s. 1.11d.	21s. 4.78d.	17s. 7.87d.

The yield continues to show only minor changes. No blue ground was taken from either the De Beers or the Kimberley mines, a small amount already on the floors of the former mine being washed.

The profit per load shows a slight falling off when compared with 1912-1913, essentially due to a lesser carat-value. The figures for the last 3 years are as follows:

## WESSELTON MINE

	Cost of Production per Load	Value per Load.	Profit per Load.
1912.....	4s. 7.576d.	13s. 1.504d.	8s. 5.928d.
1913.....	4s. 4.45d.	13s. 10.02d.	9s. 5.57d.
1914.....	4s. 7.28d.	12s. 9.33d.	8s. 2.05d.

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## BULTFONTEIN MINE

	Cost of Production per Load.	Value per Load.	Profit per Load.
1912.....	3s. 11.357d.	16s. 8.179d.	12s. 8.822d.
1913.....	4s. 1.28d.	19s. 2.79d.	15s. 1.42d.
1914.....	4s. 4.29d.	16s. 6.38d.	11s. 2.09d.

## DUTOITSPAN MINE

	3s. 10.665d.	19s. 1.11d.	15s. 2.445d.
1912.....	4s. 2.09d.	21s. 4.78d.	17s. 2.69d.
1913.....	4s. 1.49d.	17s. 7.87d.	13s. 6.38d.
1914.....			

The principal data of mining operations for the past 3 years are here represented:

## DE BEERS AND KIMBERLEY MINES

	Loads of Blue Ground Hoisted.	Loads of Blue Ground Washed.	Carats of Diamonds Found.	Selling Value per Carat.
1912.....	323,621	378,614	119,013	52s. 11.47d.
1913.....	351,347	419,881	120,514 $\frac{3}{4}$	67s. 3.74d.
1914.....	None	75,815	27,346 $\frac{1}{4}$	80s. 10.21d.

## WESSELTON MINE

	2,573,398	2,020,291	581,973 $\frac{1}{4}$	45s. 3.12d.
1912.....	2,226,157	2,143,232	576,458	51s. 2.83d.
1913.....	2,373,522	2,083,352	593,305	45s. 7.62d.
1914.....				

## BULTFONTEIN MINE

	2,334,720	2,025,450	824,760 $\frac{1}{4}$	40s. 8.24d.
1912.....	2,313,477	2,096,378	874,430 $\frac{1}{4}$	45s. 9.29d.
1913.....	2,279,838	2,069,552	785,510 $\frac{3}{4}$	40s. 10.47d.
1914.....				

## DUTOITSPAN MINE

	2,718,708	1,845,796	428,213 $\frac{1}{4}$	82s. 0.132d.
1912.....	2,491,235	2,330,234	540,033	93s. 0.45d.
1913.....	2,513,469	2,412,679	497,450	84s. 0.9d.
1914.....				

## GRAND TOTALS FOR ALL MINES

	7,950,442	6,270,151	1,963,960 $\frac{1}{4}$	.....
1912.....	7,382,216	6,989,725	2,111,436	.....
1913.....	7,166,829	6,641,398	1,906,612 $\frac{1}{4}$	.....
1914.....				

In addition to the direct results from the mines, 765,880 loads of tailings washed in 1914, yielding 82,488  $\frac{1}{4}$  carats of diamonds; to this must be added 1,104,577 loads of lumps from which 94,276  $\frac{1}{4}$  carats of diamonds were extracted. This would make a total yield for the year, from all sources, of 2,083,376  $\frac{3}{4}$  carats.

In computing the visible resources of the company, account must be taken of the blue ground on the floors of the mines, which has been

hoisted but not yet washed. The following figures show the number of such loads (blue ground and lumps) at the close of the year 1913-1914.

	Loads
De Beers.....	48,396
Wesselton.....	3,450,638
Bultfontein.....	3,138,134
Dutoitspan.....	4,098,854
<b>Total.....</b>	<b>11,331,022</b>

This already represents a considerable outlay and a large potential source of future returns, the prospective value of the working being emphasized by the following table of blue ground actually in sight.

	Loads
De Beers (above the 2040-ft. level).....	2,750,000
Kimberley (above the 3520-ft. level).....	2,000,000
Wesselton (above the 980-ft. level).....	16,000,000
Bultfontein (above the 1000-ft. level).....	10,500,000
Dutoitspan (above the 750-ft. level).....	13,500,000
	<b>44,750,000</b>

This, with the stock on the floors, should eventually produce diamonds to the value of from £30,000,000 to £35,000,000.

The value of the Blue-ground Stocks Reserve remained at £2,268,266 The Permanent Reserve Fund is also unchanged at £1,800,000.

Some of the shafts were sunk deeper during the year, the figures now being:

<b>De Beers:</b>		
Rock shaft.....	2640 ft.	
No. 1 shaft.....	1728 ft.	
<b>Kimberley:</b>		
Main rock shaft.....	3601 ft.	} The open mine has an average depth of 1200 ft. from the surface, the deepest point being 1293 ft.
Atkins shaft.....	1109 ft.	
<b>Wesselton:</b>		
No. 1 main rock shaft.....	1119 ft.	
No. 2 main rock shaft.....	1667 ft.	
<b>Bultfontein:</b>		
No. 1 main rock shaft.....	708 ft.	
No. 2 main rock shaft.....	1715 ft.	
<b>Dutoitspan:</b>		
No. 1 main rock shaft.....	1424 ft.	
No. 2 main rock shaft.....	768 ft.	

The Premier (Transvaal) Diamond Mining Co., Ltd., was registered December 1, 1902, and acquired soon afterward that part of the Elandsfontein Farm No. 85, called Prinsloo's portion, for £67,000 in fully paid shares out of the capitalization of £80,000. Not long thereafter the remainder of the Elandsfontein Farm, known as Minnaar's portion, was purchased for £25,650 in cash; the entire area of this holding is about 3300 acres. Additional acquisitions are the Louwsbaken Farm, No. 399, covering 1931 morgen (about 4087 acres), and part of the Kuckerboschfontein, No. 325, with an area of 1136 morgen (2404 acres), and also a part of the Spitzkop Farm, No. 31, with an extent of 928 morgen (1754 acres). A still larger addition to the holdings was made

in September, 1908, when the property of the Pretoria District Diamond Co., Ltd., having an extent of 2335 morgen (4942 acres), was purchased for £21,650. The Premier mine has an area of 3484 claims, and is worked as an open mine, the depth in October, 1914, being 232 ft. An estimate made of the blue ground above the 360-ft. level places it at 33,000,000 loads, which should contain over 6,000,000 carats of diamonds. Tests made to a depth of 1,000 ft. showed that the blue ground still continued to this depth. The government receives as its share three-fifths of the profits over and above capital expenditures.

The capital is but £80,000, divided into 160,000 preferred shares of 5s. each and 320,000 common shares of 2s. 6d. each. No dividends are payable on the common shares until the preferred shares shall have received a cumulative annual dividend of 250 per cent. This has heretofore been regularly paid, the last semi-annual dividend of 125 per cent. having been paid June 8, 1914. On the common shares the dividends have been as follows:

1904-05.....	400 per cent.	1910-11.....	500 per cent.
1905-06.....	400 per cent.	1911-12.....	650 per cent.
1906-07.....	400 per cent.	1912-13.....	750 per cent.
1907-09.....	Nothing.	1913-14.....	200 per cent.
1909-10.....	400 per cent.		

The principal results of the mining operations in the Premier from its organization are as follows for years ending October 31:<sup>1</sup>

Year.	No. of Loads Worked.	No. of Carats Found.	Value of Diamonds.	Yield per 100 Loads, in Carats.	Profit per 100 Loads.
1903.....	76,931	99,208¼	£137,435 2s. 9d.	129.0	£155 4s. 2d.
1904.....	939,265	749,653½	866,030 0 5	79.8	79 0 8
1905.....	1,388,071	845,652	994,687 5 7	60.9	55 4 6
1906.....	2,988,471	899,746	1,277,739 6 4	30.1	25 7 6
1907.....	6,538,669	1,889,986¾	1,702,630 19 8	29.0	14 6 3
1908.....	8,058,844	2,078,825½	1,536,719 19 0	25.8	9 15 11
1909.....	7,517,793	1,872,136½	1,172,378 7 2	24.9	5 16 9
1910.....	9,331,882	2,145,832¾	1,496,641 5 5	23.0	5 16 1
1911.....	8,325,272	1,774,206	1,433,970 6 9	21.3	6 7 5
1912.....	9,707,098	1,992,474	2,004,943 3 5	20.5	8 13 2
1913.....	10,434,680	2,107,983	2,336,828 15 1	20.2	9 12 3
1914.....	7,683,943	1,417,755	1,259,643 5 11	18.5	3 18 9
	72,990,919	17,873,459	£16,219,647 17s. 6d.		

*Quotations.*—1911, preferred, high 8¾, low 7⅞; common, high 10<sup>1</sup>/<sub>16</sub>, low 6½; 1912: preferred, high 9, low 8⅞; common, high 13½, low 8½; 1913, preferred, high 9¾, low 8¾; common, high 13¾, low 9¾; 1914, preferred, high 9⅞; low 6¾; common, high 10¾; latest, preferred, 6⅞-7⅞; common, 3⅞-4⅞.

The Twelfth Annual Report of the Premier Mining Co. for the year ending October 31, 1914, covers only 9 months of actual operation, as all work was suspended, because of the outbreak of the war, from

<sup>1</sup> Compiled from the 12 Annual Reports of the company for the years 1903 to 1914, inclusive.



August 10, 1914, when 14,000 native laborers then in the company's employ were discharged and repatriated. For about 300 of the white employes who were unable to find places elsewhere, certain routine work was provided in connection with the removal of the floating reef and in guarding the property. For their wages £4825 was expended in the 3 months and the sum of £550 per month was paid to those dependent on the men who volunteered for service in the field.

Up to the time of the cessation of work the amount of blue ground hauled and washed was about up to the average of the previous year, although the diamond product was less; the number of loads handled was as follows:

From the 260-ft.-level.....	3,949,156
From the 310-ft.-level.....	2,922,311
From the 360-ft. level.....	812,476
Total.....	<u>7,683,943</u>

The diamond yield was 1,417,755 carats, an average per load of 0.185 carat. During the previous year, 10,434,680 loads had been washed, yielding 2,107,983 carats of diamonds, or 0.202 carat per load.

The Diamond Account shows a credit of £1,259,643, leaving a balance of £302,516, after deducting £906,576 for mining expenses and a little over £50,000 for office expenses, etc. As the value of the diamond stock was diminished £131,272 by the year's operations, the actual balance carried to Expenditure and Revenue Account was but £171,243. After taking from this £49,983 for general equipment, a balance of £121,260 of realized profits remained to be divided between the government of the Union of South Africa and the shareholders of the mine in the proportions of 60 and 40 per cent., respectively.

A preferred dividend of £50,000 (6s. 3d. per share) and two deferred dividends of £140,000 (8s. 9d. per share) and £80,000 (5s. per share) respectively, were paid during the year, the second preferred dividend being passed for the first time since the organization of the company. The 40 per cent. of the realized profits belonging to the shareholders (£48,504) of course fell far short of the amount required for dividend payments, and the necessary sum had to be made up by the balance of £116,567 brought forward from October 31, 1913, by sundry revenue (£44,504) and by an authorized transfer of £47,905 from the Trading and Emergency Funds.

The temporary set-back caused by the war will probably be made good eventually by the realization of greater profits in the period of industrial and commercial activity sure to follow the wasteful conflict. Hence the present unfavorable showing of this mine, and of all other similar interests, leaves the essential worth untouched. A somewhat less satisfactory aspect is, however, offered by the sharp fall in the

diamond yield to 0.185 carat per load, coupled with a decrease in the selling price of the product.

The steady, progressive decline of the yield appears in the following table.

	Yield in Carats per Load.	Value per Load.	Cost of Production per Load.	Profit per Load.
1909.....	0.249	3s. 1.43d.	1s. 11.42d.	1s. 2.01d.
1910.....	0.230	3s. 2.49d.	2s. 0.56d.	1s. 1.93d.
1911.....	0.213	3s. 5.34d.	2s. 2.02d.	1s. 3.32d.
1912.....	0.205	4s. 1.57d.	2s. 4.79d.	1s. 8.78d.
1913.....	0.202	4s. 5.74d.	2s. 6.67d.	1s. 11.07d.
1914.....	0.185	3s. 3.34d.	2s. 5.89d.	9.45d.

As will be noted, although the cost of production was a trifle lower in 1914, the profit per load was only a little over 40 per cent. of that secured in 1913. Of course, the considerable fall in price greatly accentuated the effect of the decreased diamond yield, and with better prices a fair profit could still be realized even should the yield fall slightly lower, but the indication in itself remains a somewhat unfavorable one.

To make provision for hauling from lower levels, two engines, each of 1000 h.p. were purchased, and they reached the mine just after the stoppage of work on the 10th of August. The 360-ft. level has been opened up and 33,000,000 loads of blue ground are available above this level. The average depth of the open workings is 232 ft., showing an increase of 23 ft. over the depth, October 31, 1913.

Priels, Ltd., registered June, 1913, in South Africa, holds the mining rights, with 3-year renewals in perpetuity, of the Priel Estate of 80 acres, the land being partly in the Barkly district and partly in the Kimberley district. For this the payment was £60,000 in paid-up shares, besides the clearing off of liabilities of the former holders, the Priel Diamond Mining Co., Ltd., amounting to £17,000. The income of the new undertaking is to come principally from royalties paid by the diggers to whom the property has been thrown open. Capital £125,000 in £1 shares, of which 100,000 have already been issued and fully paid. Of this capital a controlling interest has been acquired by the South African Diamond Corporation, Ltd.

Roberts Victor Diamonds, Ltd., registered January 6, 1906, in the Transvaal. The property under control is part of a tract known as Farm Damplaats, No. 319, at a distance of 20 miles to the northeast of Boshof, Orange Free State, and has an extent of over 500 acres. It has been leased for 25 years with a renewal right for another term of the same duration, in consideration of a cash payment of £9,000 and £132,200 in full-paid shares. Further acquisitions were the Rietkuhl Farm No. 269,



of 2335 morgen, for which £8636 was given in October, 1906, the Waaihoek Farm No. 102, with an area of 2446 morgen secured in 1907, and 5 morgen of the Waterval Farm, on the south side of the Modder River, utilized for a pumping-station, the Waaihoek Farm being opposite on the north side of the river. Of the prospective profits four-tenths belong to the government, which has, however, agreed to accept £100 per month until 1915 in lieu thereof. The results of mining have been as follows:

	Loads Treated.	Diamond Yield in Carats.	Carats per 100 Loads.
1911.....	216,968	52,712	24.2
1912.....	218,362	72,490	33.1
1913.....	168,334	52,307	31.0
1914 (part).....	69,295	16,717	24.1

As the yield was diminishing, owing to a contraction of the "pipe," work in the old mine was abandoned and new ground was opened up to the southwest; operations here have been interrupted by the war. Capital, £160,000 in £1 shares; 150,000 issued and full-paid. Dividends of 50 per cent. were declared in 1907; nothing was paid in 1908; in 1909, 25 per cent. was distributed; nothing in 1910-1912; in 1913—10 per cent. paid in December. *Quotations.*—1911, high 3½, low 15s. 6d; 1912, high 2, low 5⁄8; 1913, high 47s. 10½d., low 23s. 6d.; 1914, high 19⁄16, low ½; last 5⁄8.

South African Diamond Corporation, Ltd., registered May 3, 1913, in the Transvaal, the objects being the acquisition of diamond properties and dealings therein. Among the companies in which it has interests are the Priels, Ltd., the New Vaal River Diamond, the New Thor, and the Roberts Victor Diamond Co.; capital £1,000,000, latest quotations, 1-1¼.

Tanganyika Concessions, Ltd., Registered January 20, 1899. Among its acquisitions and holdings is a mineral concession of 60,000 square miles in the Congo Free State. For this 30,000 fully paid shares were given to the former holders, the Katanga Special Committee (Belgian), this body retaining 60 per cent. of the eventual profits. Mineral discoveries here include extensive copper, gold, tin and iron deposits and also diamond-bearing gravel. For the development of the last-named deposits special arrangements have been entered into. The working capital is provided by the Katanga Special Committee, the Zambesia Exploring Co., Ltd., and the Tanganyika Concessions, the first-named providing one-half and the two others each one-quarter. Of the profits 5 per cent. will be set aside as reserve, one-half of the remainder is to be divided between the three companies in the proportion of their contributions to working

capital; of the other half 80 per cent. is to go to the Katanga Special Committee and 20 per cent. to the Tanganyika Concessions. The results of tentative working up to December, 1913, show 187 carats of diamonds from 9315 loads of ground washed. Prospecting for the discovery of new deposits is in progress.

United States Diamond Mining Syndicate, Ltd., registered April 9, 1914 for the acquisition from T. L. West of an option to 363 acres of diamond-bearing land in Elliott County, Kentucky. For the option £500 in full-paid deferred shares was given, the provision being that in case of purchase the price of the land should be \$50,000. Capital, £10,500, is divided into 10,000 ordinary shares of £1 each and an equal number of deferred shares of 1s. each. After dividends aggregating 100 per cent. shall have been paid on the ordinary shares, the surplus profits are divisible in the proportion of 50 per cent. each between the ordinary and the deferred shares.

Vaal River Diamond Co., Ltd., registered January 18, 1889. The company secured 140 claims on the Gong-Gong alluvial diggings Vaal River district, Griqualand West, Cape Colony, as well as the freehold of the Gong-Gong Farm and of the Buckland Farm, in all a property of 9285 acres having 3 miles frontage on the Vaal River. The price was £22,500 in cash and £7500 in fully paid shares. The Gong-Gong Farm was sold in December, 1910, to the Diamond Proprietary Mines, Ltd., for £30,000 in fully paid shares of that company, and the Buckland Farm to the Bucklands Estate and Diamond Co., Ltd., for 120,000 fully paid shares of its stock. The capital of the Vaal River Diamond Co. was £50,000 in £1 shares.

Diamantfontein Development Syndicate, Ltd., registered October 24, 1911. This syndicate has acquired a 5-year-option from the Oceana Development Co., Ltd., to purchase three farms known as Diamantfontein, Graspan and Pienaarsfontein, having a total area of 11,725 acres, and located in the Bloemhof district of the Transvaal. The payment for the right was £6600 in cash to the vendors and the same amount to the founders. The option gives a privilege of purchase for £30,000 in cash. Additional options have since been secured, one on the enterprise of the Kunst Diamonds, Ltd.; this has been used, the Roodeplaats (De Beer) Diamond Mines, Ltd., having been organized to take over the rights and holdings. Another option over a mining property at Kroonstad in the Transvaal was acquired in 1914, for an annual rental of £300 and one-third of the capital shares of the Diamantfontein Syndicate, as well as the right to secure any new issues at par. The cost of the Kroonstad property, if 44 claims were brought, was to be £5000 cash, 20 per cent. of any increase of capital, or one-third of the stock of

any new company formed to work the claims; should, however, the whole property be purchased within 3 years, the cost payment would be £15,000.

Diamond Exploration and Finance Syndicate, Ltd., registered February 18, 1902. Possesses share interests in a number of companies, including the Fanti Mines, the Mount Boppy, The Gibraltar Consolidated and the Maikop Premier. Capital, £60,000 in 179,994 common shares of 6s. 8d. each, and two life-governors' shares of £1 each, one of these latter being held by Julius Pam and the other by the estate of the late John Dixon. After a 30 per cent. dividend (non-cumulative) shall have been paid on the common shares, they are entitled to one-half of the surplus profits, the other half going to the life-governors' shares. Of the common shares, 59,950 are issued and fully paid. As the statement for January 31, 1915, shows a debit balance of £10,209, a slight increase over that of the preceding year, the immediate prospect for dividends is not very favorable.

Diamond Proprietary Mines, Ltd., registered December 7, 1910, for the purpose of purchasing the freehold farm of Gong-Gong, Barkly West, Griqualand West, Cape Colony, from the Vaal River Diamond Co., Ltd. The cost of this acquisition was £30,000 in fully paid shares. The area of this farm is 3571 acres, and the revenue of the company is to be derived from one-half of the license-fees of 5s. per claim each month from the diggers, the territory being proclaimed a public digging; the other half is retained by the government. Capital, £50,000, in 200,000 shares of 5s. each, 166,595 being already issued and fully paid. The last statement shows a debit of £436 on profit and loss account.

Frank Smith Diamond Estates and Exploration Co., Ltd., registered March 28, 1900. The company was to acquire the rights of the Frank Smith Diamond Mines, Ltd., and of the Hartz River Diamond and Estates Syndicate, Ltd. This comprised six freehold farms in the Hartz River Division of Barkly West, Cape Colony, with a total area of about 40,845 acres, as well as the 423 claims of the Frank Smith Prospect Diamond Mine. For these rights and properties the sum of £188,100 was paid, mainly in fully paid shares of the new company. Additional territory, farm No. 54, was purchased for £3060 in 1909. Operations for nine months in 1907 gave a yield of 6407 carats of diamonds, about 1.6 carat for each 100 loads washed. After temporarily transferring its rights and assets to a new company (the Welgelegen Diamond Co., Ltd.) the original company was reorganized. Work with a new washing plant, having a capacity of 4000 loads per day, resulted in the recovery of 7207 carats-weight of diamonds in the last 6 months of 1913; this was an average of 3.94 carats per 100 loads. For the 7 months

ending July 31, 1914 still better results were attained, 14,665 carats of diamonds being secured from 388,805 loads, giving an average of 3.8 carats per 100 loads. Here, as elsewhere, the war interrupted all operations. Capital, £300,000 in 800,000 shares of 7s. 6d. each, of which 538,250 shares have been issued and fully paid. *Quotations.*—1911, high 12s. 3d., low 4s.; 1912, high 12s. 6d., low 7s. 6d.; 1913, high 15s. 6d., low 5s.; 1914, high 8s. 6d., low 1s. 6d.; latest 1s. 6d.

German Southwest African Diamond Investment Co., Ltd., registered November 25, 1909, in Cape Town, its objects being the acquisition of interests in diamond-mining enterprises in German Southwest Africa, as well as in gold-mining undertakings in the Transvaal. This company secured entire control over the Diamanten Abbau Gesellschaft of Luderitzbucht. Capital, £150,000 in £1 shares.

Griqualand West Diamond Mining Co., Dutoitspan Mine, Ltd., registered September 22, 1881, in Cape Colony. The entire properties of this company were leased in 1889 to the De Beers company at an annual rental of 4 per cent. on the shares of the Griqualand West Co., the debenture debt of £158,000 being also assumed. Capital, £1,057,000 in shares of £10 each. *Quotations.*—1911, high 7¼, low 6¾; 1912, high 7½, low 6⅞; 1913, high 7¾, low 9; 1914, high 7½, low 6⅞.

Kamfersdam Mines, Ltd., registered April 16, 1896. Acquired 400 diamond mining claims and the freehold of the farm of Kamfersdam, Griqualand West, Cape Colony. This farm on which the mines are located has an area of 10,000 acres, and the price paid for it was £215,000 in fully paid shares. The mining operations for 1905-6 yielded 42,041 carats of diamonds from 594,434 loads of blue ground washed; the output for 1906-7 was much smaller, 13,388 carats being secured from 249,495 loads, the average per 100 loads falling from 7.07 carats to 5.36 carats. Since July, 1907, washing has been suspended, although it would have been resumed last year had the war not ensued. Capital, £400,000 in £1 shares, of which 357,098 have been issued and fully paid; there are also £40,000 of debentures bearing 7½ per cent. interest. The report of June 30, 1914, showed a loss of £20,537 on the year. *Quotations.*—1911, high 10s., low 3s.; 1912, high 14s., low 8s. 6d.; 1913, high 15s., low 10s.; 1914, high 12s. 6d., low 6s. 3d.

Koffyfontein Mines, Ltd., registered May 19, 1893, for the purchase of the Koffyfontein Diamond Mines in the Jacobsdal district of the Orange Free State, comprising about 1000 claims. For this £50,000 in fully paid shares was given, as well as a royalty on all diamonds that might be sold. The holdings of the company were eventually increased to some 1243 claims. The mining results in recent years have been as follows:

	Carats of Diamonds.	Loads Washed.	Average Yield per 100 Loads.
1912-13.....	64,349	1,119,198	5.7
1913-14.....	73,966	1,185,793	6.2

On June 30, 1914, there were 2,194,942 loads on the floors; operations were discontinued in October, 1914. This mine has been controlled by the De Beers company since 1911. Capital, £375,200 in common shares of £1 each. For 1909-10 a dividend of 15 per cent. was paid, and one of 10 per cent. for 1910-11; since this year no further dividends have been declared. *Quotations.*—1911, high  $3\frac{3}{4}$ , low  $1\frac{7}{8}$ ; 1912, high  $2\frac{1}{8}$  low  $1\frac{9}{16}$ ; 1913, high  $2\frac{3}{4}$ , low,  $1\frac{9}{16}$ ; 1914, high,  $2\frac{3}{16}$ , low  $1\frac{3}{8}$ ; latest 16s. 6d.

Kolmanskop Diamond Mines, Ltd., registered February 5, 1909, in Cape Colony. Organized to secure a 50-year lease on about 10,000 acres of diamond mining property near Luderitzbucht, German South-west Africa. This was acquired for £100,000, half in cash and half in paid-up shares. The tax due the German government was fixed at 66 per cent. of the proceeds of diamond sales, 70 per cent. of the working expenses and half-a-mark per carat being allowed as rebate. The yield in 1910 was 146,658 carats; in 1911, 147,234 carats; in 1912, 122,525 carats; in 1913, 106,874 $\frac{3}{4}$  carats. Capital, £125,000 in £1 shares. Dividends of 55 per cent. were declared in 1909; in 1910, the dividends were 45 per cent., in 1911, 30 per cent., and in 1913, also 30 per cent. The report for year ending December 31, 1913, showed a net profit of £36,365, the Reserve Fund, after payment of dividends amounting to £24,250.

The Modderfontein Proprietary Mines, Ltd., registered March 16, 1903, in the Transvaal, was voluntarily liquidated March 27, 1914, after disposing of its holding, the Modderfontein Farm, to the South African government at a valuation of £5 per morgen (2.11 acres); the area of this farm is 2600 morgen and the company had given £270,000 in paid-up, £1 shares for it.

Montrose Diamond Mining Co., Ltd., registered May 11, 1898, as the Transvaal Diamond Mines, Ltd., the name being changed in April, 1903. It acquired the freehold of the Wrynek Farm No. 74, having an area of 2000 acres and forming part of the Elandshoek Farm in the district of Pretoria, Transvaal. The price paid was £45,000 in paid-up shares. On this property three "pipes" have been discovered. From December, 1911 to February, 1912, 410 carats of diamonds were extracted from 2072 loads of alluvial, equal to 19.3 carats per 100 loads; in the ensuing 3 months the yield was 665 carats for 5223 loads,

12.7 carats per 100 loads. Capital, £200,012, represented by 100,000 preferred shares and 100,012 common or deferred shares, the former being entitled to a 6 per cent. cumulative dividend and one-half of surplus profits over the amount of this dividend; there are also £6000 of debentures bearing 7 per cent. interest. The statement for 2 years, submitted February 25, 1914, showed £54,931 charged to the debit of Development Account. *Quotations*.—1911, high 21s. 6d., low 10s.; 1912, high 16s. 6d., low 9s. 6d.; 1913, high 20s., low 7s. 9d.; 1914, high 5s. 3d., low 1s.

New Jagersfontein Mining and Exploration Co., Ltd., registered May 16, 1887, in the Cape and Orange River Colonies. This company may be said to own all the Jagersfontein Mine, having an area of about 4 square miles, and, in 1911, it added to its holdings the property of the Klipfontein Diamond Mine & Estate Co., Ltd., at a cost of £20,000. The following figures give the results of operations for 3 years, each ending March 31.

	Loads Washed.	Carats of Diamonds.	Value.	Yield per 100 Loads.	Cost per Load.
1912.....	3,798,831	344,635	£1,116,432	10.62	3s. 5d.
1913.....	4,173,753	363,397	1,259,983	9.99	3s. 3d.
1914.....	4,403,383	330,524	1,161,661	8.90	4s. 1d.
Total.....	12,375,967	1,038,556	£3,538,076		

As the value per load for the year ending March 31, 1914, was 5s. 3.3d., there was a profit of 1s. 2.3d. on each load washed; the average profit in the 2 previous years was slightly higher. Capital, £1,000,000 in £1 shares, of which 850,000 are issued and fully paid. Recent dividends have been as follows:

1910-11.....	60 per cent.
1911-12.....	50 per cent.
1912-13.....	45 per cent.
1913-14.....	37½ per cent.

*Quotations*.—1911, high  $8\frac{21}{32}$ , low  $7\frac{7}{16}$ ; 1912, high  $7\frac{9}{16}$ , low  $5\frac{31}{32}$ ; 1913, high  $7\frac{23}{32}$ , low  $5\frac{1}{16}$ ; 1914, high  $5\frac{17}{32}$ , low  $2\frac{7}{8}$ ; latest,  $2\frac{5}{8}$ – $2\frac{1}{8}$ .

New Vaal River and Exploration Co., Ltd., registered January 25, 1902, in Cape Colony. Its holdings comprise the alluvial diamond deposits of the Vaal River Estate, extending along the Vaal River for about 27 miles, and having an area of 80 acres; this property is situated in the district of Barkly West, Cape Colony, some 30 miles from Kimberley. For these deposits, £106,000 in fully paid shares was given. The holdings of the W. W. Diamond Syndicate, Ltd., were acquired in 1909 for 7800 shares, and those of the River Diamonds Syndicate, Ltd., in the same year, for 17,500 shares. The company receives a royalty on



the diamonds taken from a field it opened up for digging in July, 1902. The returns from the diamond mining for 1911 were 17,139 carats, having a value of £107,000; the figures for 1912 were 26,386 carats, valued at £179,645, and in 1913, 50,070 carats of diamonds were recovered, their value being £336,266. This shows a very rapid increase in the output. Capital, £200,000 in £1 shares, 168,870 of these being issued and fully paid, including 12 founders' shares, the latter being entitled to 20 per cent. of the surplus profit after 20 per cent. annual payment on the common shares. These have received recently the following dividends: April 23, 1913, 10 per cent.; December 13, 1913, 10 per cent.; December, 1914, 5 per cent. *Quotations.*—1911, high  $1\frac{5}{16}$ , low  $\frac{5}{8}$ ; 1912, high 25s., low 10s. 6d.; 1913, high  $2\frac{1}{16}$ , low  $\frac{7}{8}$ ; 1914, high  $1\frac{9}{16}$ , low  $\frac{3}{4}$ , latest  $\frac{5}{8}$ — $\frac{3}{4}$ .

North Kimberley Diamond Mines, Ltd., registered April 25, 1910. Owns 250 acres of diamond-bearing ground near Kimberley. For this £20,000 in cash was paid to the Ottos Kopje Diamond Mines, Ltd. The government receives a leasehold rent of £1 per acre and also a royalty of 10 per cent. of the amount obtained for diamonds extracted. Results here are still in suspense, washing having been suspended November 12, 1912, up to which date 101,703 loads of ground had been washed, with a yield of 3,428 carats, or 3.37 carats per 100 loads. An average price of £3 11s. per carat was secured for the output. The falling in of a reef, due to an earthquake shock, has been the chief detriment to operations here. The mine has two "pipes" about 200 yds. distant from each other. Capital, £37,500 in 150,000 shares of 5s. each; there are also 6 per cent. debentures to the amount of £14,680.

Orange Free State and Transvaal Diamond Mines, Ltd., registered December 13, 1894, as the Robinson Diamond Mining Co., Ltd.; the name was changed in 1898. The holdings embrace 500 claims including 664 acres of the Kaarvallei Farm and the adjoining Dirksburg Farm with an area of 2389 acres; this was acquired for £15,000, the Kaarvallei Farm having cost £300,000 in fully paid shares. Washing of 77,971 loads of blue ground produced 5444 carats of diamonds, or nearly 7 carats per 100 loads. Capital, £550,000 in £1 shares, all issued and fully paid. *Quotations.*—1911, high 3s. 6d. low 1s.; 1912, high 3s. 6d., low 6d.; 1913, high 2s. 6d., low 6d.; 1914, high 2s., low 6d.

In the diamond diggings of the southwestern Transvaal, there was in 1914 a great falling off in the number and value of diamonds secured; indeed, owing to the general depression in the diamond trade and the local rebellion in South Africa, these diggings were practically deserted toward the close of the year. The following figures are given of the carat weight of diamonds recovered, and of their value, in each month of the year 1914, those for December being estimated:

	Carats of Diamond.	Value.
January.....	3,064	£12,346
February.....	3,838	12,167
March.....	3,865	18,150
April.....	4,196	18,415
May.....	4,226	18,729
June.....	3,549	15,985
July.....	4,696	19,234
August.....	2,227	6,623
September.....	2,104	6,053
October.....	2,068	5,399
November.....	833	1,949
December.....	800	1,800
	35,466	£136,859

These totals compare with those of the 3 previous years as follows:

	Carats.	Value.
1911.....	37,861	£198,854
1912.....	79,709	386,668
1913.....	81,943	422,616

The returns for the first 6 months of 1914, showing 27,738 carats of diamonds, worth £99,811, indicate a greatly reduced production even before the war, as compared with 1912 and 1913; labor troubles are said to have been one of the chief causes of this.<sup>1</sup>

While as a rule all diamond-mining operations in the Union of South Africa were interrupted immediately after the beginning of the war, the Koffeyfontein mine endeavored to carry on work on a small scale, with white men only, so as to provide its white employes with a little remunerative labor as long as possible. To relieve the distress in the Vaal diggings, where so many individual miners are entirely dependent upon their own resources, the Ministry of Mines took measures to secure free railway passes for those who lacked the funds necessary to enable them to return to their homes, to reach some place where they might find employment. In extreme cases, and as an exceptional measure, emergency rations were even issued to those absolutely unable to provide for their daily needs.<sup>2</sup> We have already noted the measures taken by the great diamond companies to relieve, as far as possible, the necessities of their workmen and employes. The Jagersfontein mine is stated to have pursued a similar policy to that of the De Beers company in the treatment of their employes.

The diamond production of South Africa, in 1914, in spite of the cessation of many operations in the latter half of the year, reached a value of £5,487,194 (\$27,435,970), the aggregate weight being 2,801,016 carats.

<sup>1</sup> *So. Afr. Min. Jour.*, January 23, 1915.

<sup>2</sup> *So. Afr. Min. Jour.*, August 20, 1914, p. 648.



The following figures show the distribution of the value for 1914 among the three diamond-producing states of the Union of South Africa.

Cape.....	£3,544,072
Transvaal.....	1,162,031
Orange Free State.....	781,091

The value of the diamonds exported from the Union of South Africa in 1913 was \$58,476,000, but in 1914 these figures were reduced by more than one-half, to \$26,820,000, the exports since the outbreak of the war amounting to less than \$1,000,000. This can not be accounted for as in the case of the gold exports (only \$2,450,000 during the last 5 months of 1914<sup>1</sup>), by the fear of German cruisers, but really represents the temporary stagnation in the diamond trade.

The number of natives employed in the diamond mines of South Africa just prior to the war was 41,413, these being the figures for June, 1914, published by the Government Department of Mines. Of these 14,509 were working in the Transvaal, 17,698 in Cape Colony and 9206 in the Orange Free State. The natives employed by individual diamond diggers were not included in these statistics. It has been suggested that a considerable number of the natives thrown out of work by the recent shutting down of the diamond mines could be profitably and advantageously employed by the gold mines of the Rand, and it is asserted that this labor element could easily be absorbed in these mines.<sup>2</sup> Certainly the value of gold and the need for an increased supply may be said to be greater now, in time of general financial stress, than ever before, for the task of maintaining adequate gold reserves in the belligerent countries has taxed and is taxing the ingenuity of all the financial ministers, as well as all the leading banking institutions and bankers.

An attempt to secure diamonds on certain of the small Guano Islands off the coast of German Southwest Africa was recently made, but proved decidedly unsuccessful. The expectation had been that the gravel washed up on their shores would yield diamonds, especially as submarine deposits were known to extend for a considerable distance beyond the mainland. However, the only partial success was registered on Possession Island, where 223½ carats of diamonds having a value of £511 10s. were recovered from 3000 loads of the gravel; of these 180 carats came from a belt 20 ft. wide, just about high water, and running east and west for some 300 ft. The tests on the other islands of the group were entirely unsuccessful and as an expenditure of about £8,250 resulted in a diamond yield of only a little over £500, as we have just noted, the enterprise was definitely abandoned.<sup>3</sup>

<sup>1</sup> The gold exports for 1913 amounted to nearly \$183,000,000.

<sup>2</sup> *So. Afr. Min. Jour.*, Aug. 8, 1914, p. 589.

<sup>3</sup> Dr. Percy A Warner: "The Diamond Deposits of German Southwest Africa," *So. Afr. Min. Jour.*, October 3, 1914, p. 71.

The progressive increase in the average size of the diamonds found in German Southwest Africa, proceeding from north to south up to a certain point, and the decrease after passing this point, are approximately and broadly shown in the following table:

Locality.	Average Weight in Carats.	Weight of Largest Stone Found, in Carats.
Conception Bay and Spencer Bay.....	$\frac{3}{8}$ - $\frac{1}{10}$	1
Kolmanakop.....	$\frac{1}{8}$ - $\frac{1}{8}$	2 $\frac{3}{4}$
Stauch and Fiskus Claims.....	$\frac{1}{8}$ - $\frac{1}{8}$	3 $\frac{1}{4}$
Pomona.....	$\frac{1}{2}$ - $\frac{1}{2}$	24 $\frac{1}{2}$ -36
Bogenfels.....	$\frac{1}{8}$ - $\frac{1}{8}$	17 $\frac{1}{4}$
Frohe Hoffnung.....	$\frac{1}{16}$ - $\frac{1}{8}$	3
Angras Juntas.....	$\frac{1}{8}$ - $\frac{1}{8}$	1

The largest stone so far secured precisely within the Pomona territory weighs 10 carats; the large stone credited above to the Pomona district came from land covered by the claims of the Deutsche Diamantgesellschaft, immediately to the south of the Pomona boundary. Another large stone, weighing 33 carats, was found in the same region.<sup>1</sup>

The latest report from the diamond fields of the Belgian Congo notes the finding of some 50 stones in the gold placers of the north-eastern part of the colony. The operations of the Kundelunga-Lualaba Exploitation Co. continue to be actively pushed, 13 whites and 250 blacks being employed in the work. While the returns for 1913 at Luanza, showing a recovery of but 218 small diamonds, weighing about 187 carats, from 4390 loads of ground washed, indicate a very low average, less than 0.02 carat per load, further development work here may be attended with better results. In March, 1914, a party of engineers was sent out to test the kimberlite pipes in the Katanga region, which number about seventeen. These diamond deposits are within the sphere of action of the "Société Belge Industrielle et Minière du Katanga," and the claim is made that several new pipes have been discovered in the course of 1914. The development work in the Kasai diamond fields is reported to be progressing.<sup>2</sup>

A second shipment of rough diamonds from the Kasai region, mined by the Belgo-American company, the "Société Forestière et Minière du Congo" was sold in Brussels in March, 1914. The total weight of these diamonds was 4884 carats, of which 1254 carats represented diamonds of first quality, 1303 carats of second quality, and 2327 of inferior quality. The entire shipment was bought by a single firm of Antwerp diamond dealers for \$25,494, an average of \$5.22 per carat, somewhat less than had been realized on the first shipment, the return,

<sup>1</sup> Dr. Percy A. Wagner: "The Diamond Deposits of German Southwest Africa," *So. Afr. Min. Jour.* September, 19, 1914, p. 40.

<sup>2</sup> Details communicated by Sidney H. Ball.

however, being regarded as favorable in consideration of the slightly lower market rates prevailing and the quality of the diamonds offered.<sup>1</sup>

*Australia.*—There is said to be some possibility that a Holland-Belgium diamond syndicate may be induced to acquire an interest in the mine and leases at Copeton of the Mount Ross Diamond and Tin Mining Co., should an expert investigation reveal the presence, or satisfactory indications of the presence of a "diamond-pipe" here, or should the deposits promise profitable returns from operations on a large scale. The whole matter is, however, as yet in the stage of tentative negotiation.

*South America.*—Brazilian Diamond Concessions Syndicate, Ltd., registered June 13, 1911, the object being to secure an option on diamantiferous lands from J. C. Pavia and M. W. Greite, the property being known as Poso Alto and Parauna, in the district of Poso Alto do Serro, State of Minas Geraes, Brazil. For this option the consideration was £3525, of which £500 was payable in cash, £3000 in full-paid common shares. Capital, £10,500, represented by 10,000 common shares and 50 founders' shares, the latter being entitled to one-half of surplus profits after payment of a 10 per cent. dividend on the common stock. Debentures to the amount of £2050 had been issued up to September, 1912, out of an authorized £4,000.

A diamond-mining venture in British Guiana, for some time successfully operated, was the Corona Diamond Syndicate, owned by Hon. John Purroy Mitchel and R. R. Fogel. In 1902, diamonds to the number of 54,740 and weighing 4135 carats were produced. In 1905 Mr. Mitchel remained for 5 months at the mine and during his visit some very fine diamonds were secured.<sup>2</sup>

In 1912 and 1913 mining operations on diamond deposits along the Upper Mazaruni River were quite active, and the results attained have been pronounced satisfactory, the average size of the diamonds being greater than in previously worked areas. One stone weighing 10 carats was found, as well as two others having weights of 6 and 5½ carats respectively; these as well as all other diamonds from these deposits having been secured merely by surface washings. The banks of the Potaro River have also been prospected and the indications for a good diamond yield here are regarded as favorable.<sup>3</sup>

The diamond output of the colony from July 1, 1912 to June 30, 1913 is given as follows:

Masaruni.....	71,883	6,841
Cuyuni.....	3,596	786¼
Total .....	75,479	7,577¼

<sup>1</sup> Vice-Consul General Harry A. McBride, of Boma, Belgian Congo, *Daily Cons. Tr. Rept.*, June 15, 1914.

<sup>2</sup> Communicated by R. R. Fogel, of R. R. Fogel & Co., New York City.

<sup>3</sup> Report of the Gold, Diamond and Forest Industries of British Guiana, 1912-1913.

This compares with 81,034 stones, weighing 6977 carats in the previous year, and with 36,450 stones, weighing 4682 carats, in the year 1910-1911.

The total number of stones reported from this colony in the period from April 1, 1900, to March 31, 1913, was 1,130,494, and the total weight 85,809 $\frac{5}{32}$  carats. The average weights were: for 1910-1911, 0.13 carat; for 1911-1912, 0.085 carat; for 1912-1913, 0.10 carat, these figures showing the small size of the stones usually found here.

*United States.*—The most recent isolated discovery of a diamond in the United States was that of a small trisoctahedral stone at Choteau, Montana, May 17, 1915. This diamond, slightly imperfect and of a brownish hue, weighed 0.13 carat.

#### EMERALDS

The Colombian Emerald Company, Ltd., registered December 22, 1908, went into voluntary liquidation June 8, 1914. The amount of the capital stock issued, £159,000 in £1 shares, was returned to the shareholders in October, 1914, and in addition the sum of 5s. has since been paid on each share. This company was organized to work the emerald deposits at Muzo, Colombia, the sum of £32,000 (£4000 in cash and £28,000 in fully paid shares) being the consideration for the acquisition of the rights. In the year from March 1, 1909 to February 28, 1910, the weight of the emeralds recovered was 182,054 carats; 30,684 of the first class, 49,208 of the second class, and 102,162 carats of the third class. Many inferior stones were also brought up. The liquidation followed the seizure of the mining property by the Colombian government and subsequent litigation.

#### GARNETS

The method employed for mining the almandite garnet of Alaska differs from that generally used in mining gems, in that no explosives are employed. To loosen the garnets from the mica schist in which they are embedded, holes are drilled in this and filled with lime. As the rock formation is soft and dry, the disintegrating effect of the lime suffices to split it up and liberate the garnets. The largest known deposits of this superior kind of garnet are to be found in our Alaskan territory, and a splendid exhibit of these most attractive semi-precious stones, with their ruby-like richness of color—many of the ancient "carbuncles" were of this type—are to be seen in the Palace of Varied Industries at the Panama International Exhibition, where they are shown in connection with the trade exhibits of the methods of cutting precious

stones. All the processes in this art, from the initial stages to the final cutting, as well as the setting and mounting of the cut stones, can be observed by the visitors, who, in watching the deft work of the skilled lapidarists employed here, will gain a better understanding of how much the beauty of the finished gem owes to human intelligence and industry.

#### PEARLS

For many years there has been an ever-increasing demand for pearls. The world has become richer, pearls have come more and more into favor, and fine pearls are becoming every day rarer, especially in view of the disorganization of industries either directly or indirectly connected with them.

The price of the finer pearls has been maintained, and when business again resumes its normal condition there will surely be a greater demand than ever before, and with the apparent exhaustion of the Cinghalese beds these beautiful gems will certainly lose nothing of their present high value.

It is gratifying to note that recently a motor pump was introduced in pearl-diving, by means of which a diver can descend to the depth of 35 fathoms (280 ft.) instead of to only 15 or 20 fathoms (120 to 160 ft.) as heretofore. At the greater depths larger pearl-shells exist, and the largest pearls are found in the oldest shells. These motor pumps have been introduced into eight different fisheries, and it seems most likely that by their application the pearl yield can be enlarged. When diving to greater depths it is necessary that a diver be taken to the surface less rapidly, because of the rush of blood to the head and the consequent shock to the brain caused by a sudden removal of great pressure.

The finest pearls of the South Pacific are found near the shores of some of the small coral islands of the Tuamotu group about 100 miles eastward from Tahiti. Pearl-fishing is carried on here from August to November under the strict regulation of the French authorities. The different beds are worked successively, an interval of 3 years being prescribed between one fishing season and the next. The pearl-divers, almost all natives, number about 3500, the fishing privileges being exclusively reserved for French subjects. No diving machines or other similar contrivances are permitted, the divers employing the most primitive outfit, large goggles, a loin-cloth, and a rope and weight.<sup>1</sup>

By the terms of a contract made between the government and Gen Diego A. De Castro, of Barranquilla, the latter is given a 5-year concession of the pearl-fisheries along the coast of the Peninsula of Goajoiá,

<sup>1</sup> Report of Consul James H. Goodlier, Papeete, Tahiti, *Daily Cons. Tr. Rept.*, Dec. 21, 1914, p. 1236.

from November 20, 1914. The government's share of the net profits is to be 15 per cent. for the first year, 20 per cent. for the second and third years, and 25 per cent. for the fourth and fifth years.<sup>1</sup>

In the Madras pearl-fisheries a serious attempt is to be made to promote the artificial growth of pearls, not only of the so-called "attached" pearls, a goodly number of which have been already produced, more especially in Japan, but of the far more valuable "free pearls," the production of which has not heretofore been attended with much success. The officers of the Madras Presidency Fisheries Department have been interested in the matter, and the methods advocated by Mr. Hornell are to be applied on a considerable scale in an oyster farm established in the waters near Krusudai Island, close to Pamban. The announcement is also made that the chank fisheries on the Coromandel Coast are soon expected to become a good source of revenue, as they have been thoroughly and satisfactorily reorganized.<sup>2</sup>

As in other pearling centers, so in the Thursday Island fisheries, has the production been seriously impeded by the changed conditions since the outbreak of war. The greatly decreased demand from London and its cessation from other parts of Europe, has rendered pearl-fishing unprofitable, a very trying state of things for the inhabitants of Thursday Island, most of whom depend upon this industry for their subsistence. Every effort has therefore been made to continue operations, even on a greatly reduced scale, about half of the boats commonly employed being in use from October to December, 1914, but it was found necessary to dismiss a large part of the Japanese divers, 150 having been sent back to their native land. The number of Japanese still employed is 480, in addition to 60 Malaysians and 13 natives of New Guinea. The stringent Australian regulations do not permit the Japanese to land on the island, they being obliged to live continuously on their boats; they are under contract for a 3-year period, all expenses from Hong Kong being paid by the owners of the fisheries. It is found, however, that should the present depression continue, they must all be sent back to Japan.<sup>3</sup>

#### RUBIES

The report of the Burma Ruby Mines, Ltd., for the year ending February 28, 1914, though issued some months before the commencement of the war, compares very unfavorably with that of the previous year 1912-13. Instead of having a credit balance, the Income and Expenditure Account closes with a deficit of £9065 10s. 1d. for the year's opera-

<sup>1</sup> Report of Consul Isaac A. Manning of Barranquilla, Feb. 16, 1915.

<sup>2</sup> *Indian Agriculturist*, October 1, 1914, p. 318.

<sup>3</sup> From *Honolulu Star-Bulletin*, May 27, 1915.



tions, reducing the balance of £12,412 7s. 4d. brought over from the preceding year to £3346 17s. 3d.

The mining operations for the past 3 years show a progressive decrease in the number of truck-loads of ruby earth washed, coupled with an increase in the cost of mining. The figures are as follows:

	Trucks of ruby earth washed.	Cost of production.
1911-12.....	1,479,845	7.5 d.
1912-13.....	1,383,146	7.77d.
1913-14.....	1,148,155	9.09d.

The increased working expenses for 1913-1914 amount to about £5977 for the ruby earth washed, and this of course accounts in part for the diminished returns. The margin of profit under these circumstances is extremely narrow. These conditions mainly concern the old Mogok Mines; the new Kathé Mine, 8 miles from Mogok, shows better results, and with the steady improvement that has been noted here the setback in the company's affairs may be only temporary. Of course, just at present activity has been checked in these mines, as in the case of the diamond mines of South Africa.

The general weakness in the European ruby market was reflected in a decrease of sales for 1913-14, these reaching only £46,566 11s. 7d., as compared with £65,647 13s. 7d. for 1912-13, a falling off of £9081 2s. To render the financial situation somewhat less pressing the chairman of the Board of Directors has proposed to the Indian government to allow the Burma company the privilege of temporarily retaining the royalties collected, of which the company is only entitled to a percentage for collection. The stock of rubies on hand February 28, 1914, including those sold but not yet paid for at that time, was valued at £58,933 9s. 2d., the corresponding figures for February 28, 1913, being £61,345 11s. 7d.

This company was registered, February 26, 1889, securing from the Secretary of State in Council of India, a 7-year grant, with renewals, of ruby mines in Burma, the rent being 400,000 rupees *per annum* and one-sixth of the net profits. For this grant £55,000 in cash was paid. On May 1, 1904, the lease was renewed for 28 years at an annual rental of 200,000 rupees, in addition to 30 per cent. of all income from the license-holders over 20,000 rupees, as well as 30 per cent. of the net profits. In January, 1912, the Secretary of State agreed to accept, in lieu of annual rent, all payments received for royalties, less a 10 per cent. fee for collection, and half of all net profits in excess of £18,000 until all arrears of rent should be paid. The lease covers a tract in Upper Burma

having an area of about 400 sq. mi., the chief scene of mining operations being the Mogok Valley. A new territory at Kathé, 6 miles distant from Burma, has been mined in recent years. The capital is £180,000, in £1 shares. The following dividends have been declared:

1898-99.....	5 per cent.
1899-1900.....	12½ per cent.
1900-01.....	17½ per cent.
1901-02.....	17½ per cent.
1903-04.....	15 per cent.
1904-05.....	7½ per cent.
1905-06.....	4½ per cent.
1906-07.....	8½ per cent.
1907-08 } to	Nothing.
1910-11 } 1911-12 }	4½ per cent.
1912-13.....	4½ per cent.

*Quotations.*—1911, high 6s., low 2s. 6d.; 1912, high 7s. 3d., low 5s.; 1913, high 6s., low 4s. 4½d.; 1914, high 4s., low 2s.

#### SAPPHIRES

From the appropriately named Sapphiretown, in the Anakie sapphire field, Queensland, Australia, comes the news that concerted effort is being made to encourage the cutting by Australian cutters of the fine sapphires found in this region. At present the greater part of the best sapphires are exported in the rough and are cut in Europe, formerly, to a great extent, in Germany. One of the measures advocated is the imposition of a sufficient import duty on cut stones, and also on the so-called synthetic sapphires. As to the marketing of the Australian output, an offer to undertake this, made by a Sydney firm, has been refused, because the house in question insisted upon having control of the entire production. This was found to be impracticable in view of the multiplicity of separate claims in the sapphire fields.<sup>1</sup>

The sapphire output of the Anakie fields was curtailed the past year, 1914, by the cessation of buying following the disorganization of the gem market. The estimated value of the year's product is £15,800 (\$79,000) of which £1600 represented the worth of stones to be used for mechanical purposes, the remainder being the value of the gem-material recovered. This fell far short of the previous estimates for the year, which were put as high as £20,000. It is interesting to note that a good proportion of the Australian supply was cut in the region, where cutting works have recently been established. The value of the sapphires cut in Australia during the year was £5800, some of the material having been produced in previous years.<sup>2</sup>

<sup>1</sup> *Austral. Min. Stand.*, October 8, 1914.

<sup>2</sup> *Austral. Min. Stand.*, February 11, 1915.



## METRIC CARAT

An effective protest was recently made in England against the undue liberty of the Standards Department of the Board of Trade in the allowance of variations in the standard carat-weights, this having gone so far as to practically nullify the close agreement with the precious-stone weights used in other countries, which was the chief advantage to be gained by the introduction of the metric carat. As a result of this agitation the following revised scale of allowable errors has been issued by the Standards Department:

Metric Carats.	Permissible Error in Milligrams.
500	6
230	6
100	4
50	4
20	2
10	2
5	1
2	1
1	1
0.5	1
0.2 to 0.005	No appreciable error.