from the centre of economic pressure. The operators of South Africa had probably laid in large food and equipment supplies in advance, which delayed the time when they would have to purchase in the higher priced market which followed. Another factor which may account for this condition is the improvement in the recovery returns in the treatment of South African ores which has tended to compensate for the economic conditions that have been so universally oppressive to the gold mining industry generally. In Australia, a country which is no less remote from the centre of economic pressure, but on account of the fact that the resources of the Australian gold mines are becoming rapidly exhausted, we have a continuous decline totalling 45.5 per cent for the last three years. The decline in Canada is 26 per cent covering this period of three years. The British India decline is 13 per cent; the Rhodesia is 15.8 per cent; and the entire decline in the gold production of Great Britain, including all of her colonies, amounts to $46,000,000 for the last three years and represents 15.4 per cent of the total production for 1915.

In the United States we find the decline to be 32.2 per cent. Of the total decline of 92 millions in the world's gold production, the decline in the production of the United States accounts for one-third or approximately 35 per cent of the total, while normally the gold mines of the United States produced one-fifth of the world's gold output. That denotes the extreme economic pressure to which the gold mining industry of the United States was subjected, due to the war, and reflects the volume and rapidity of the financial mobilization of the United States upon entering the war. The effect was much more acute here than it was in some other countries that had felt the pressure from the beginning in 1914.

Russia, we naturally expect, would show the effect of disorganized government, and so it does. The Russian decline is 62 per cent for the past three years, a drop from $26,000,000, and this spells more eloquently than anything else the effects of Bolshevism.

The South and Central American states show an increase of 5.3 per cent, and it is altogether likely that some of that increase has been made up by the increased recovery of by-products gold from the treatment of copper ores.

The Mexican crisis in gold production took place in 1915. This happened to coincide with the year in which the high point of the world's gold production took place and is evidence of the chaos in which the Mexican Government found itself at the initiation of revolution. The production was a little over $6,000,000 in 1915, and in three years it has increased to $10,000,000, so we have in Mexico an output increase of 52 per cent. All the other countries of the world not heretofore mentioned but combined, show a decline in their production of 4.2 per cent.

To analyze the situation of the United States a little more carefully, I have prepared a chart on exactly the same principle as the world production chart, and covering the same years from 1912 to 1918. We find that California has just about maintained its production ratio to that of the United States in a somewhat similiar manner as South Africa maintained its production with respect to the world, notwithstanding the fact that the economic pressure was so severe in the United States. This may be accounted for because of the fact that considerable of the California output comes from placer mining, where labor is not so large a factor in the cost of production. Labor also was not so difficult to procure in California, because it was rapidly drawn from the interior states to the seaboard for other industrial purposes. The decline in California is 23.7 per cent. In Colorado we find a decline of 45 per cent. This is due in part to the difficulty in obtaining labor and to the complexity of ore treatment which involved the use of chemicals, the price of which advanced very rapidly as war progressed. In Alaska we have a decline of 45.5 per cent which corresponds exactly with the decline of Australia, and it can be accounted for, not altogether by the economic pressure, because you will recall the closing down of the Treadwell mine which was an important factor in contributing to the Alaskan output. Nevertheless, the decline since 1917 shows the tremendous effect of the war on the Alaskan production. In Nevada we have a decline of 44 per cent due largely to the complex treatment of their ores and the fact that they were located away from the coast, thereby making labor difficult to retain. In South Dakota we have the Homestake mine which was so well developed and has so large a reserve of homogeneous ore that it was able, without difficulty, to maintain the normal output in fairly good shape. The output of this mine contributes by far the larger portion of the gold output of South Dakota, and the decline for this state is 8.3 per cent. In Arizona the copper production expanded very rapidly in the last three years, and to that expansion must be accredited the increase of gold output of 26.4 per cent. In Montana we have a decline of 36.3 per cent, and all of the states and dependencies of the United States, not before mentioned but combined, show a loss of 33.4 per cent which corresponds very closely to the general loss for the entire production of the United States, which was 32.2 per cent.

This third chart is an attempt to show the effect of a combination of factors which account for the decline of the gold production throughout the world in the last three years. In 1912 the hypothetical quartz gold mine, which I have chosen as an example, yielded $12 per ton, and the total cost of production was $7 per ton. You obtain the cost of production per ounce of $11.70 with a profit of $8.30 per ounce. I have assumed the price of gold at $20. The depreciation value of the ore with depth and the increased cost of production with depth are two factors which frequently exist in gold mining and operate to increase the cost of producing the gold ounce regardless of any change in the economic conditions. So that in 1913 we have assumed a recovery of $11 per ton at a cost of $7.50 per ton. In this case we have a production cost per ounce of $13.60 while the net profit was $6.40 per ounce. For 1914 we have assumed a recovery of $10 per ton and a cost of production of $8.50, which combine to produce the cost of $16 per ounce with a net profit of $4 per ounce. At this time the management realized that they were approaching very rapidly the economic limit, and while they had been operating on a 3000 ton basis per month, they decided to reduce their cost of production by increasing their output to 6000 tons per month. In 1915, therefore, with a double output we have assumed a recovery of $9 per ton and a cost of production of $7 per ton, which indicates a re-