SUMMARY OF THE MINERAL PRODUCTION OF THE UNITED STATES IN 1900.

GENERAL REMARKS.

The varied character of the units of measurement employed in the mineral industry makes it impossible to compare the outputs of the several minerals except in the value of the products. The figures given in the following summary show a continuation of the remarkable activity in the mineral industries of the United States noted in 1899. The total value of our mineral products during 1900 exceeded for the first time the enormous sum of $1,000,000,000, the exact figures being $1,067,605,587, as compared with $971,900,894 in 1899, a gain of $95,704,693, or 9.85 per cent. While this gain is not so great, either actually or proportionately, as the gain in 1899, when the gain over 1898 was $273,698,547, or 39.20 per cent, it is more than three times the normal growth of the mineral industries from 1880 to 1898 and shows that the mineral industries keep pace with the great prosperity of the nation.

This is the largest actual gain attained, except that of 1899 over 1898, being approached only in 1895, when the gain over 1894 was $94,634,861, or 17.97 per cent. In 1887 the gain over 1886 was $74,927,880, or 16.81 per cent. In other years between 1880 and 1898, the gains were not noteworthy, while in some of the years, notably 1884, the product decreased $40,451,968, or nearly 9 per cent. During the industrial depression of 1892–1895 the product would have been expected to decline, which it did, going from $648,675,081 in 1892 to $574,299,886 in 1893, to $526,624,139 in 1894, and to $621,259,000 in 1895, and not reaching the output of 1892 until 1898.

As heretofore, iron and coal are the most important of our mineral products, the value of the former in 1900 being $259,944,000 and of the latter $306,891,364. Nearly all the important minerals increased in output, though some showed an increase in product and a decline in value, notably copper, which increased 37,450,245 pounds, but decreased $2,728,673, while zinc fell off in both product and value. The fuels increased from $340,756,211 in 1899 to $406,250,518 in 1900, a gain of $65,494,307, or 19.22 per cent. Every variety of fuel increased except

anthracite coal, which showed a decline from 53,944,647 long tons in 1899 to 51,221,353 long tons in 1900, owing to the labor disturbances in the fall of 1900. The average value of anthracite coal per ton at the mine was $1.49 in 1900 and $1.46 in 1899, while the average price per ton for bituminous coal at the mine was 87 cents in 1899 and $1.04 in 1900.

Of the total gain of $95,704,693 the metallic products contributed $24,462,127, while the nonmetallic products increased $71,242,566 in value.

METALS.

Iron and steel.—The great record-breaking output of pig iron in 1899, which was 13,620,703 long tons, valued at $245,172,654, was maintained and even exceeded in 1900, notwithstanding the general feeling that the output of 1899 would not be equaled in 1900. The production of pig iron for 1900 was 13,789,242 long tons, valued at $259,944,000. This is an increase of 168,539 tons, or 1.24 per cent, and of $14,771,346, or 6.02 per cent. This gain is insignificant, however, when compared with the gain in 1899 over 1898. In the former year the gain over the latter was 1,846,769 long tons, or 15.69 per cent, while the value increased $128,615,654, or 110.35 per cent. This great increase, especially in the value, was the result of abnormal conditions and of course could not be expected to be maintained. In fact, in the face of the large production of 1899, which appeared to be an overproduction, it is astonishing that the output and value of this commodity should have kept up. The average price per ton of pig iron increased from $18 in 1899 to $18.85 in 1900. This was very close to the maximum price of $19 reached in 1887. The average price per long ton in recent years has been as follows: 1897, $9.85; 1896, $10.47; 1895, $11.14; 1894, $9.76; 1893, $11.90.

The production of Bessemer steel ingots decreased from 7,586,354 long tons in 1899 to 6,684,770 tons in 1900. This is a loss of nearly a million tons and makes the production in 1900 about the same as that of 1898, when it was 6,609,017. The production of open-hearth steel in 1900 was 3,398,135 long tons, which is an increase from 2,947,316 tons in 1899. The production of Bessemer steel rails increased from 2,240,767 long tons in 1899 to 2,383,654 tons in 1900.

Iron ores.—The production of iron ores in the United States during 1900 amounted to 27,553,161 long tons, as compared with 24,683,173 in 1899, a gain of 2,869,988 tons, or 12 per cent. The value of the iron ores mined in 1900 was $66,590,504, as compared with $34,999,077, a gain of $31,591,427, or 90.26 per cent.

The production of 1900, as for 1898 and 1899, was a record breaker, not only for this country, but the outputs of iron ores during these years have never been equaled by any other country, the nearest

approach to our output being in 1900 by the German Empire when 18,667,950 long tons were produced.

Copper.—The great activity of 1899 in the copper industry was continued during 1900. The product increased from 568,666,921 pounds in 1899 to 606,117,166 in 1900, a gain of 37,450,245 pounds, or 6.59 per cent, while the value decreased from $101,222,712 in 1899 to $98,494,039 in 1900, a loss of $2,728,673, or 2.7 per cent. While the average price per pound during 1900 was high compared with that obtaining during the last decade, it was nevertheless lower than the price in 1899. The average price per pound in 1900 was 16.25 cents; in 1899 it was 17.8 cents, and in 1898 it was 11.75 cents. While in 1900 some of the leading producers did not mine as much metal as in former years, others largely increased their output. There was great activity in the opening up of old mines and the development of new properties, but few reached the production stage in 1900.

Lead.—The lead smelting and refining industry in 1900 was marked by an unprecedented increase in production over the preceding year. The output increased nearly 30 per cent, from 210,500 short tons in 1899 to 270,824 short tons in 1900. The value increased from $18,945,000 to $23,561,688. The increased production is attributed to the stimulating effect of the high prices which prevailed and which were artificially established and maintained by the consolidated interests of the smelting and refining works. It is believed that the consumption did not increase in proportion to the increase in production.

Zinc.—The production of zinc decreased from 129,051 short tons in 1899 to 123,886 tons in 1900, a decrease of 5,165, or 4 per cent. The value showed a still greater decline, from $14,840,865 in 1899 to $10,654,196, or $4,186,669, or 28.21 per cent. The product in 1900 was considerably more than that of 1898, though the value was about the same, namely, 115,399 short tons, valued at $10,385,910.

Gold.—The gold product continued to increase, rising from 3,437,210 fine ounces in 1899 to 3,829,897 fine ounces in 1900, while the value rose from $71,053,400 in 1899 to $79,171,000. In 1898 the gold product was valued at $64,463,000.

Silver.—The coining value of the silver product in 1900 was $74,533,495, as compared with $70,806,626 in 1899. The commercial value of the product was $35,741,140, or 47.95 per cent of the coining value.

The production in 1900 was 57,647,000 fine ounces, while in 1899 it was 54,764,500 fine ounces. The average value per ounce commercially in 1900 was 62 cents; in 1899 it was 60 cents, and in 1898 it was 59 cents.

Quicksilver.—The production of quicksilver continued to decrease, notwithstanding the developments in what is known as the Terlingua district of Texas. The output in 1900 was 28,317 flasks, of 76½ pounds net, as compared with 30,454 flasks in 1899 and 31,092 flasks in 1898.

The value declined from $1,452,745 in 1899 to $1,302,586 in 1900. The production in 1900 includes a small amount, 200 flasks, reported from Oregon.

Aluminum.—The Pittsburg Reduction Company, operating under the Hall patents, continues the only producer of metallic aluminum in the United States. The production in 1900 was about 6,000,000 pounds, valued at $1,920,000, as compared with 5,200,000 pounds in 1899, valued at $1,716,000.

Antimony.—The amount of antimony obtained from ores of domestic production in 1900 was 151 short tons, valued at $27,180, as compared with 234 short tons, valued at $43,600, in 1899. This is a decrease of 35.47 per cent in production and 36.79 per cent in value. The domestic product is but a small proportion of the antimony consumed in the United States, the total product obtained from imported ores being estimated at 1,750 short tons, valued at $346,980, in 1900, as compared with 1,275 tons, valued at $251,875, in 1899. The total consumption, however, in 1900 was estimated to have been 3,577 short tons, valued at $634,917. The difference between this total and the domestic product, 1,827 short tons, valued at $287,937, was imported as crude antimony or regulus.

Manganese ores.—The production of manganese ores increased from 9,935 long tons in 1899 to 11,771 long tons in 1900, thus recovering partially from the decline in 1899 from 1898. This was an increase of 1,836 tons, or 18.48 per cent, and of $18,011, or 21.89 per cent. The average price per ton was $8.52 in 1900, as compared with $8.28 in 1899. The bulk of the manganese ores in 1900 used by the steel makers came from foreign countries.

Nickel.—The production of nickel dropped from 22,541 pounds in 1899 to 9,715 pounds in 1900. All of the domestic product was obtained as a by-product in the smelting of lead ores at Mine Lamotte, Mo. The value of the product decreased from $8,566 in 1899 to $3,886 in 1900.

Platinum.—The production of crude platinum continues to increase, although the amount produced remains small. In 1900 the product was 400 ounces, worth $2,500, as compared with 300 ounces, valued at $1,800, in 1899.

FUELS.

Coal.—The aggregate production of anthracite and bituminous coal in 1900 amounted to 240,965,917 long tons, equivalent to 269,881,827 short tons, with a value of $306,891,364, as compared with 226,553,564 long tons, or 253,739,992 short tons, in 1899, valued at $256,077,434. The increase in 1900 over the preceding year was 14,412,353 long tons, or 16,141,835 short tons, in amount and $50,813,930 in value.

The output of anthracite coal in Pennsylvania amounted to 51,221,353 long tons, or 57,367,915 short tons, valued at $85,757,851, against

53,944,647 long tons, or 60,418,005 short tons, in 1899, valued at $88,142,130. The decrease in the production of anthracite amounted to 2,723,294 long tons, or 3,050,090 short tons, in amount and $2,384,279 in value, and was due entirely to the protracted labor troubles, which practically suspended mining operations in the anthracite regions during the summer and early fall of 1900.

The total product of bituminous coal, which includes lignite or brown coal, cannel, splint, semianthracite, and semibituminous, and the small anthracite product of Colorado and New Mexico, amounted to 189,744,564 long tons, or 212,513,912 short tons, valued at $221,133,513, as compared with 172,608,917 long tons, or 193,321,987 short tons, in 1899, valued at $167,935,304, showing an increase in the bituminous product of 17,135,647 long tons, or 19,191,925 short tons, in amount and $53,198,209 in value.

In connection with the coal-mining industry in 1900 an interesting feature was the comparatively large increase in the value of the product, which was principally noticeable in the case of bituminous coal. The total increase in product was 16,141,835 short tons, or 6.4 per cent, while the value increased $50,813,930, or 19.8 per cent. The increase in value in 1900 was nearly $2,800,000 more than the increase in the value from 1898 to 1899, when the product increased 33,765,325 tons, or more than double the increase of 1900 over 1899.

Another interesting feature in connection with the coal-mining industry of the United States is the continued increase in the percentage of bituminous coal mined by mechanical methods. During 1900 there were undercut by the use of machines 52,790,523 short tons, or 24.65 per cent of the total bituminous product. The total product of bituminous coal in 1900 increased a little less than 10 per cent over the preceding year, while the machine-mined product increased over 20 per cent.

The total number of men employed in all the coal mines of the United States in 1900 was 448,706, who made an average of 212 working days, as compared with 410,635 men with an average of 214 days in 1899.

In considering the coal product, these reports include not only the coal marketed, either by shipments to a distance or sold locally, but also that consumed by the mine employees and by the mine owners themselves operating the properties, this being known technically as colliery consumption. There are occasional exceptions where operators use only slack or waste, which would otherwise be thrown on the dump and not regarded. These exceptions are few and the amount is comparatively small. The coal consumed in the manufacture of coke is also included in this report. The coal shipped, sold to local trade and used by employees, and consumed in the manufacture of coke is considered the marketable product. The colliery consumption aver-

ages about 9 per cent of the total product in anthracite production, and about 1½ per cent in bituminous mining. The marketable product in 1900 amounted to 260,689,081 short tons, as compared with 244,612,654 short tons in 1899. The increased production of coal in the United States in 1899 placed this country in unquestioned supremacy among the coal-producing countries of the world. In 1898 the production of Great Britain, which has been for several years the only real rival of the United States as a coal producer, exceeded that of the United States by about 6,300,000 tons. In 1899 the production of the United States increased nearly 34,000,000 short tons, while that of Great Britain increased a little over 20,000,000, so that the product of the United States in that year exceeded that of Great Britain for the first time in our history, with a lead of a little over 7,200,000 tons. In 1900 the production of the United States exceeded that of Great Britain by more than 17,500,000 short tons. In this connection it is interesting to note that practically all of the coal produced in the United States is consumed in this country for domestic, transportation, or manufacturing purposes. The exports of coal from the United States in 1900 were less than 9,000,000 short tons, only a little more than 3 per cent of the total product.

Coke.—The unprecedented activity which prevailed in the iron and steel trade in the United States during 1899 continued into the spring of 1900, and although the summer of 1900 developed a weak and unsettled condition in the iron and steel trade, it was not sufficient to overcome the advance made in the earlier months of the year. Sympathizing with the increased iron and steel production, the production of coke increased from 19,668,569 short tons in 1899 to 20,533,348 short tons in 1900, a gain of 864,779 short tons. The value of the product increased much more in proportion—from $34,670,417 in 1899 to $47,443,331 in 1900, a gain of $12,772,914. The increase in production amounted to 4.4 per cent over 1899; the value increased 37 per cent. The value of the coke product in 1900 was more than double that of 1897—three years before—or of any year prior to that date. The year 1900 showed important developments in the introduction of by-product coke ovens. This was exhibited more by the increase in the number of new plants constructed during the year than by any increase in production of by-product coke. The amount of coke made in by-product ovens was 1,075,727 short tons, as compared with 906,534 short tons in 1899. The number of by-product ovens in operation or completed by December 31, 1900, amounted altogether to 1,085. The number of by-product ovens in course of construction at the close of the year was 1,096, or 11 more than all the ovens completed during the eight years since the first by-product oven was constructed in the United States.

Petroleum.—The production of petroleum increased from 57,070,850 barrels in 1899, valued at $64,603,904, to 63,362,704 barrels in 1900, valued at $75,752,691. This was a gain of 6,291,854 barrels, or 11.02 per cent, and of $11,148,787, or 17.26 per cent. This product of 1900 is the largest ever attained by this country, the next largest output having been in 1896, when 60,960,361 barrels were produced. This great output was attained notwithstanding the fact that the greatly increased output of California and the new discoveries in Texas occurred so late in the year as not to enter into the output of 1900 to any extent. The average value per barrel for the entire country during 1900 was $1.19½, while for 1899 it was $1.13⅛, and for 1898 it was 79⅘ cents.

Natural gas.—The value of the natural gas product increased from $20,074,873 in 1899 to $23,606,463 in 1900, a gain of $3,531,590, or 17.59 per cent. Not only did the value increase in 1900, but also the quantity sold, and the introduction of meters and other appliances for the more careful manipulation of gas wells and pipe lines has brought about a large saving in the amount of gas required to produce a given heating effect.

STRUCTURAL MATERIALS.

Stone.—The value of all kinds of building stone produced in the United States in 1900 amounted to $48,008,739, as compared with $44,090,670 in 1899, an increase of $3,918,069. This increase was shared by all classes of building stone, the most conspicuous increase being in the production of limestone, the value of which in 1900 was about $1,600,000 more than that of 1899.

The exports of slate, which were a conspicuous feature of this branch of the building-stone industry in 1898 and 1899, fell off nearly one-third in 1900, the value of the exports decreasing from $1,363,617 to $950,543.

Clays.—The activity in all branches of the clay-working industries in 1899, noted in the last report, was continued during 1900. The value of all clay products in 1900, as reported to this office, was $96,212,345, as compared with $95,797,370 in 1899 and $73,892,884 in 1898. The figures here given for 1899 are those collected by the Twelfth Census. The brick and tile product in 1900 was valued at $76,413,775, as compared with $78,547,120 in 1899, while the pottery products were valued in 1900 at $19,798,570, as compared with $17,250,250 in 1899.

The clay mined and sold by those not manufacturing the product themselves in 1900 amounted to 1,221,660 short tons, valued at $1,840,377, as compared with 843,279 short tons, valued at $1,645,328, in 1899.

Cement.—The total product of cement in the United States in 1900 was 17,231,150 barrels, as compared with 15,520,445 barrels in 1899, a gain of 1,710,705 barrels, or 11.02 per cent. The value increased from $12,889,142 in 1899 to $13,283,581 in 1900, a gain of $394,439, or 3.06 per cent.

The Portland-cement industry in 1900 showed a large increase over that of 1899, the production being 8,482,020 barrels, as compared with 5,652,266 barrels in 1899, a gain of 2,829,754 barrels, or 50.1 per cent. The value of this product increased from $8,074,371 in 1899 to $9,280,525 in 1900. The average price per barrel in 1899 was $1.43, while in 1900 it was but $1.09. The number of producers reporting was 36 in 1899 and 50 in 1900.

The production of natural-rock cement decreased from 9,868,179 barrels in 1899 to 8,383,519 barrels in 1900, a loss of 1,484,660, or 14.9 per cent. The value fell off $1,085,923, or from $4,814,771 in 1899 to $3,728,848 in 1900 or 22.55 per cent. The average price per barrel in 1899 was 48.8 cents, and in 1900 it was 44.5 cents.

In addition to the above there were made 365,611 barrels of slag cement, valued at $274,208, or 75 cents per barrel.

ABRASIVE MATERIALS.

Corundum and emery.—The combined product of corundum and emery in 1900 amounted to 4,305 short tons, valued at $102,715, a decrease from 4,900 short tons, valued at $150,600, produced in 1899.

Garnet.—The amount of abrasive garnet produced in 1900 was 3,185 short tons, valued at $123,475, an increase from 2,765 short tons, valued at $98,325, in 1899.

Grindstones.—The production of grindstones in 1900, based on the value of the product, was the largest on record, exceeding that of 1882, the year of largest previous production, by a little over $1,000. The value of the grindstones made in 1900 was $710,026, as compared with $675,586 in 1899.

Infusorial earth and tripoli.—The production decreased from 4,334 short tons, valued at $37,032, in 1899, to 3,615 short tons, valued at $24,207, in 1900.

Millstones.—The production in 1900 was the largest since 1889, but the industry is still of insignificant importance when considered with what it was twenty years ago. The substitution of the roller process for buhrstones in flour mills has practically eliminated the use of buhrstones for this purpose. The value of the buhrstones, or millstones, produced in 1900 was $32,858, as compared with $28,115 in 1899.

Oilstones.—The value of the oilstones and whetstones made in the United States in 1900 was $174,087, a decrease from $208,283 in 1899. The production in 1899 was the largest in the history of the industry.

CHEMICAL MATERIALS.

Borax.—The production in 1900 consisted of 24,235 tons of crude and 1,602 tons of refined, with a total value of $1,018,251. No separation was made of the refined and crude borax produced in 1899, the total output amounting to 20,357 short tons, valued at $1,139,882.

Bromine.—The production increased from 433,004 pounds, valued at $108,251, in 1899, to 521,444 pounds, valued at $140,790, in 1900. The bromine is obtained from the mother liquor made in the salt works in Michigan, Ohio, and West Virginia.

Fluorspar.—The production in 1900 amounted to 18,450 short tons, valued at $94,500, as against 15,900 short tons, valued at $96,650, in 1899. Most of the production is now obtained from Marion and Crittenden counties, Ky. The decrease in the value in 1900 was due to the larger amount of the material sold in a crude or unmanipulated condition.

Gypsum.—The production of gypsum, particularly for the manufacture of calcined plaster, continues to show remarkable gains. The output of crude gypsum in 1900 amounted to 594,462 short tons, the value of which in its first marketable condition amounted to $1,627,203, as compared with 486,235 short tons in 1899, valued at $1,287,080, and 291,638 short tons, valued at $755,280, in 1898. From this it will be seen that the production, both in amount and in value, in 1900 was more than double that of 1898, two years before. The remarkable increases in the last two years are attributed to the substitution of plaster of paris for ordinary lime mortar in the manufacture of wall plaster in large buildings; also to the manufacture of staff for temporary buildings, such as is used for exposition purposes. In arriving at the value of the gypsum product, that which is sold crude is taken at its value crude, while that which is made into calcined plaster is taken for the calcined plaster produced and sold.

Marls.—The production remains practically stationary at 60,000 short tons, valued at $30,000.

Phosphate rock.—The production of phosphate rock decreased from 1,515,702 long tons in 1899 to 1,491,216 long tons in 1900, while the value increased from $5,084,076 to $5,359,248. The decrease in production is attributed to the scarcity of vessels for the foreign trade and the high ocean freight rates, a direct result of the taking away of many vessels from the carrying trade to be used in the transportation of troops, etc., to South Africa. There was also a disinclination shown among the manufacturers of superphosphates to purchase crude rock in large quantities at the advanced prices prevailing in 1900.

Pyrite.—The production of pyrite, used in the manufacture of sulphuric acid, increased from 174,734 long tons, valued at $543,249, in 1899, to 204,615 long tons, valued at $749,991, in 1900.

Salt.—The salt product includes the salt in brine in the manufacture of soda ash, caustic soda, etc., at chemical works in Michigan, New York, and Pennsylvania. Including this factor, the production in 1900 amounted to 20,869,342 barrels of 280 pounds net, an increase from 19,708,614 barrels in 1899. The value increased from $6,867,467 to $6,944,603. These figures indicate that the combinations effected by many of the larger producers in New York, Michigan, Ohio, Kansas, Utah, and California have not increased the cost to the consumers.

Sulphur.—Compared with the amount of sulphur imported into the United States and the sulphur contents of the pyrites used for acid making the domestic production of sulphur continues insignificant. It amounted in 1900 to 3,525 short tons, valued at $88,100, against 4,830 short tons, valued at $107,500, in 1899. All of the product was from Louisiana and Utah.

PIGMENTS.

Barytes.—The production increased significantly, from 41,894 short tons in 1899 to 67,680 short tons in 1900, with an increase in value from $139,528 to $188,089. The increased production was due practically to the development of properties in Tennessee.

Cobalt oxide.—Sympathizing with the decreased production of nickel in 1900 the output of cobalt oxide also decreased from 10,230 pounds in 1899 to 6,471 pounds in 1900. The value declined proportionately, from $18,512 to $11,648.

Metallic paint.—The production of metallic paint (iron ore ground for pigment), exclusive of mortar color, in 1900 was 23,218 short tons, as against 23,423 short tons in 1899, a decrease of 205 tons. The value increased from $249,945 in 1899 to $261,831 in 1900, a gain of $11,886. The production of mortar colors increased from 5,736 short tons in 1899 to 6,689 short tons in 1900, and the value increased from $65,156 in 1899 to $79,911 in 1900.

Ocher, umber, and sienna.—The production of ocher in 1900 amounted to 17,015 short tons, valued at $186,707, as compared with 14,124 short tons in 1899, valued at $140,168, a gain of 2,891 short tons and $46,539. The production of umber increased from 473 short tons in 1899, valued at $4,151, to 1,452 short tons in 1900, valued at $26,927, which is the greatest value for this product reported in recent years. The production of sienna in 1900 was 957 short tons, valued at $14,771, as compared with 588 short tons in 1899, valued at $8,205. The combined production of ocher, umber, and sienna in 1900 was 19,424 short tons, valued at $228,405, as compared with 15,185 short tons in 1899, valued at $152,524.

Venetian red.—The production of venetian red in 1900 was 14,696