

INTRODUCTION.

Scope.—This is the tenth report of the series "Mineral Resources of the United States." It presents a statement of the mineral products during the calendar year 1893, the industrial conditions affecting these products and the recent additions to the knowledge of mineral deposits in this country. Its scope is thus similar to the preceding volumes, with the addition of more than the usual references to the condition of the mineral industries in foreign countries.

Arrangement.—For convenient reference the metallic industries are grouped. These are followed by the mineral fuels, the materials used for structural purposes and pottery, abrasive materials, precious stones, phosphates and other minerals contributory to the chemical industry, mineral paints, and finally the commercial products of mineral springs.

Acknowledgments.—The statistics of production have been obtained from the producers, except in isolated cases, where some other well established agency already exists by which the statistics are collected accurately. Thus, the statistics of the precious metals are collected and reviewed by the Director of the Mint and the coal product of the State of Illinois is collected by the Bureau of Labor. Similarly the statistics of the iron and steel industries, collected by Mr. James M. Swank, for the purposes of the American Iron and Steel Association, are here accepted as authoritative. The report on anthracite coal is still prepared under the supervision of Mr. John H. Jones, for many years chief of the Bureau of Anthracite Coal Statistics, from the figures collected by his successor, Mr. William W. Ruley. In addition to this, many contributions of groups of statistics have been due to the courtesies of State officials and individuals.

The names of the statistical experts who, acting under the authority of the United States, have collected statistics from the producers are given at the heads of the special chapters.

The technical press, besides affording much information concerning new mining enterprises, has been largely drawn upon for prices, market reports, and new technical processes.

The statistics of imports and exports are all obtained from the Bureau of Statistics of the Treasury Department, frequently by special compilation.

Units.—The customary units in each trade are used. The following table illustrates the great diversity thus occasioned, but the system is the best for those most interested. The table may also be used for conversion purposes.

Comparative table of units of measure used in this report.

	Number of pounds contained.	One short ton (2,000 pounds) contains—	One long ton (2,240 pounds) contains—	One metric ton (2,205 pounds) contains—
Barrels { Salt.....	280	7½	8	7.875
Petroleum { crude (a) 42 gallons..	280	7½	8	7.875
{ refined (b) 50 gallons..	327½	6⅞	6½	6.733
{ Lime.....	200	10	11½	11.025
{ Natural cement.....	300	6½	7⅞	7.35
{ Artificial Portland cement.....	400	5	5½	5.513
{ Coal (Louisiana).....	208	9½	10½	10.601
Flasks { Anthracite coal.....	76½	26½	29½	28.824
{ Bituminous coal.....	70	28½	32	31.5
Bushels { Pennsylvania bituminous coal...	80	25	28	27.563
{ Coke.....	76	26½	29½	29.013
{ Salt.....	40	50	56	55.125
Ounces { Troy.....	56	35½	40	39.375
{ Avoirdupois.....	8,339	230½	268½	264.42
Gallons (mineral water).....				
Carat (4 grains).....				

(a) 45° B.

(b) Illuminating oil 150° fire test, 48° B.