California mines and minerals

Yale Charles G
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Author: Yale Charles G

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FERRY BUILDING, SAN FRANCISCO, ONE HALF THE UPPER FLOOR OF WHICH IS OCCUPIED BY THE STATE MINING BUREAU.
(This building is constructed of Colusa Sandstone and the reconstructed tower is of reinforced concrete.)
CALIFORNIA MINES AND MINERALS

Compiled by CHAS. G. YALE, Statistician State Mining Bureau.

THE mining interests of the State of California are so diversified, and the industry is extended over so wide an area, that it is difficult to describe the conditions which exist without using many pages of printed matter.

For this reason it has been considered proper, in this pamphlet, to give merely a record of results, which will show in plain figures what is being accomplished by the miners of the State. This record shows that some forty mineral substances are being exploited, the annual valuation of which is now $43,069,227, and increasing as capital is invested and more mines are opened. The older mines, too, having been well developed and equipped, are increasing their annual output, and thus also proving their permanency and value with depth. For the past 19 years the total mineral output of California amounts to $505,699,408.

The climatic conditions are favorable to mining operations throughout the State, and means of transportation have been so improved as to greatly lessen costs of supplies, etc. There are abundant opportunities for the safe and profitable investment of capital in the various branches of the industry, as numerous claims which have been located have never been properly developed or equipped, their owners lacking the necessary means.

The State Mining Bureau, maintained by State aid, provides numerous publications in the form of Bulletins or Reports, giving in detail the conditions existing in gold, copper, quicksilver, and all the various branches of mining. It also publishes maps of the counties which show the location of all mines, roads, streams, etc. The Bureau is in charge of a State Mineralogist, who has a corps of trained Field Assistants, and an office force as well. There is a fine technical library, and a very large museum showing specimens of all mineral products, suitably arranged for reference. There is also a well-equipped laboratory for the determination of minerals.

The Bureau publishes, among other things, an annual Statistical Bulletin showing by counties the output and value of all substances mined or quarried in California. From the latest bulletin of this character, covering the calendar year 1905, the figures and tables given in this pamphlet are taken, in the belief that they will give, perhaps, the best idea of what the mines of the State are producing and what the miners are accomplishing.
TOTAL MINERAL PRODUCT OF CALIFORNIA FOR 1905.

The following table shows the yield and value of mineral substances of California for 1905, as per returns received at the State Mining Bureau, San Francisco, in answer to inquiries sent to producers:

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Value</th>
<th>Quantity</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos</td>
<td>112 tons</td>
<td>$2,625</td>
<td>Macadam</td>
</tr>
<tr>
<td>Asphalt</td>
<td>40,304 &quot;</td>
<td>285,290</td>
<td>Magnesite (Crude)</td>
</tr>
<tr>
<td>Bituminous Rock</td>
<td>24,753 &quot;</td>
<td>60,436</td>
<td>Marble</td>
</tr>
<tr>
<td>Borax</td>
<td>46,334 &quot;</td>
<td>1,019,158</td>
<td>Mineral Paint</td>
</tr>
<tr>
<td>Cement</td>
<td>1,265,553 bbls.</td>
<td>1,791,916</td>
<td>Mineral Water</td>
</tr>
<tr>
<td>Chrome</td>
<td>40 tons</td>
<td>600</td>
<td>Natural Gas</td>
</tr>
<tr>
<td>Clays (Brick)</td>
<td>286,618 M</td>
<td>2,273,786</td>
<td>Paving Blocks</td>
</tr>
<tr>
<td>Clays (Pottery)</td>
<td>133,805 tons</td>
<td>130,146</td>
<td>Petroleum</td>
</tr>
<tr>
<td>Coal</td>
<td>46,500 &quot;</td>
<td>144,500</td>
<td>Platinum</td>
</tr>
<tr>
<td>Copper</td>
<td>16,997,489 lbs.</td>
<td>2,650,605</td>
<td>Pyrites</td>
</tr>
<tr>
<td>Fuller's Earth</td>
<td>1,344 tons</td>
<td>38,000</td>
<td>Quicksilver</td>
</tr>
<tr>
<td>Gems</td>
<td>148,500</td>
<td>8,121</td>
<td>Rubble</td>
</tr>
<tr>
<td>Glass Sand</td>
<td>9,257 &quot;</td>
<td>19,197,043</td>
<td>Salt</td>
</tr>
<tr>
<td>Gold</td>
<td>19,197,043</td>
<td>353,837</td>
<td>Sandstone</td>
</tr>
<tr>
<td>Granite</td>
<td>228,788 cu. ft.</td>
<td>533,857</td>
<td>Silver</td>
</tr>
<tr>
<td>Gypsum</td>
<td>12,850 tons</td>
<td>54,500</td>
<td>Slate</td>
</tr>
<tr>
<td>Infusorial Earth</td>
<td>3,000 &quot;</td>
<td>15,000</td>
<td>Soapstone</td>
</tr>
<tr>
<td>Lead</td>
<td>533,650 lbs.</td>
<td>25,083</td>
<td>Soda</td>
</tr>
<tr>
<td>Lime</td>
<td>616,995 bbls.</td>
<td>555,322</td>
<td>Tungsten</td>
</tr>
<tr>
<td>Limestone</td>
<td>192,749 tons</td>
<td>323,325</td>
<td>Total value</td>
</tr>
<tr>
<td>Lithia Mica</td>
<td>25 &quot;</td>
<td>276</td>
<td></td>
</tr>
</tbody>
</table>
The principal increases to be noted for 1905 over the previous year are $87,443 in the gold; $690,011 in petroleum; $252,109 in cement; $327,240 in clays for brick and pottery; $320,348 in borax; $236,118 in limestone; $41,754 in mineral waters; $19,813 in lead; and $12,500 in gems. The largest increase is seen to be in the value of the petroleum.

The total value of the metallic substances (including precious metals) for 1905 was $23,523,984, which includes gold, silver, pyrites, quicksilver, copper, lead, manganese, platinum, chrome and tungsten. The silver is given in commercial value. Tungsten appears in the column for the first time, and there is a notable increase in the amount of platinum saved.

The value of non-metallic substances was $2,145,930, including borax, salt, mineral waters, soda, asbestos, coal, fuller's earth, gypsum, infusorial earth, lithia mica, magnesite, mineral paint, and gems.

The total value of hydrocarbons and gases was $9,456,025. The hydrocarbons include asphalt, bituminous rock, natural gas, and petroleum. In 1904 the product of petroleum in the State was 29,736,003 barrels, worth $8,317,809. In 1905 it was 34,275,701 barrels, valued at $9,007,820. The increase in output for the year is thus shown to be 4,539,698 barrels, and in value $690,011.

In structural materials the total value for the year was $7,943,288, an increase over 1904 of $668,442. These materials include lime and limestone, macadam, glass sand, marble, granite, sandstone, paving blocks, rubble, slate, soapstone, brick and pottery clays, and cement. In the latter substance the increase in the output for the year amounted to 296,015 barrels, the number made in 1905 being 1,265,553 barrels.

The relative value of the principal mineral products of the State is as follows: 1st, Gold; 2d, Petroleum; 3d, Copper; 4th, Clays and their products; 5th, Cement; 6th, Borax; 7th, Macadam; 8th, Quicksilver; and 9th, Rubble.
While gold is still the leading mining product, its yield no longer puts the greatest gold-producing county in the first place. The petroleum of Kern County, together with its other mineral products, gives it the leading place as a mineral-producing county. Yet the highest value of any single product in any county was that of gold in Nevada County, $3,179,715. Gold is more widely distributed than any other substance thus far mined in California; 35 counties out of the 57 in the State showing a gold yield in 1905, and it is known to exist in several others. The order in rank of the counties of the State, in the production of gold alone, is at present as follows:

**COUNTY RANK IN GOLD PRODUCT IN 1905.**

<table>
<thead>
<tr>
<th></th>
<th>County</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nevada</td>
<td>$3,179,715</td>
</tr>
<tr>
<td>2.</td>
<td>Butte</td>
<td>2,607,500</td>
</tr>
<tr>
<td>3.</td>
<td>Amador</td>
<td>2,445,815</td>
</tr>
<tr>
<td>4.</td>
<td>Calaveras</td>
<td>1,736,816</td>
</tr>
<tr>
<td>5.</td>
<td>Tuolumne</td>
<td>1,291,726</td>
</tr>
<tr>
<td>6.</td>
<td>Kern</td>
<td>1,160,971</td>
</tr>
<tr>
<td>7.</td>
<td>Siskiyou</td>
<td>803,035</td>
</tr>
<tr>
<td>8.</td>
<td>Trinity</td>
<td>690,844</td>
</tr>
<tr>
<td>9.</td>
<td>Shasta</td>
<td>684,952</td>
</tr>
<tr>
<td>10.</td>
<td>Sacramento</td>
<td>668,382</td>
</tr>
<tr>
<td>11.</td>
<td>Placer</td>
<td>597,793</td>
</tr>
<tr>
<td>12.</td>
<td>Sierra</td>
<td>517,303</td>
</tr>
<tr>
<td>13.</td>
<td>San Bernardino</td>
<td>$473,893</td>
</tr>
<tr>
<td>14.</td>
<td>Mariposa</td>
<td>386,380</td>
</tr>
<tr>
<td>15.</td>
<td>El Dorado</td>
<td>384,735</td>
</tr>
<tr>
<td>16.</td>
<td>Yuba</td>
<td>324,135</td>
</tr>
<tr>
<td>17.</td>
<td>Mono</td>
<td>308,884</td>
</tr>
<tr>
<td>18.</td>
<td>Plumas</td>
<td>283,810</td>
</tr>
<tr>
<td>19.</td>
<td>Inyo</td>
<td>135,959</td>
</tr>
<tr>
<td>20.</td>
<td>San Diego</td>
<td>109,712</td>
</tr>
<tr>
<td>21.</td>
<td>Madera</td>
<td>50,867</td>
</tr>
<tr>
<td>22.</td>
<td>Stanislaus</td>
<td>50,000</td>
</tr>
<tr>
<td>23.</td>
<td>Humboldt</td>
<td>45,824</td>
</tr>
<tr>
<td>24.</td>
<td>Fresno</td>
<td>40,037</td>
</tr>
<tr>
<td>25.</td>
<td>Riverside</td>
<td>$35,690</td>
</tr>
<tr>
<td>26.</td>
<td>Los Angeles</td>
<td>15,035</td>
</tr>
<tr>
<td>27.</td>
<td>Del Norte</td>
<td>10,590</td>
</tr>
<tr>
<td>28.</td>
<td>Monterey</td>
<td>4,000</td>
</tr>
<tr>
<td>29.</td>
<td>Tulare</td>
<td>2,300</td>
</tr>
<tr>
<td>30.</td>
<td>Ventura</td>
<td>1,200</td>
</tr>
<tr>
<td>31.</td>
<td>Santa Barbara</td>
<td>725</td>
</tr>
<tr>
<td>32.</td>
<td>Alpine</td>
<td>575</td>
</tr>
<tr>
<td>33.</td>
<td>San Luis Obispo</td>
<td>300</td>
</tr>
<tr>
<td>34.</td>
<td>Mendocino</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Undistributed</td>
<td>147,500</td>
</tr>
</tbody>
</table>

**Total** $19,197,043
TOTAL GOLD PRODUCT OF CALIFORNIA—1848-1905.

The following table shows the total gold yield of California, by years, from the time mining commenced in 1848 to 1905, inclusive:

<table>
<thead>
<tr>
<th>Year</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1848</td>
<td>$245,301</td>
</tr>
<tr>
<td>1849</td>
<td>10,151,360</td>
</tr>
<tr>
<td>1850</td>
<td>41,273,106</td>
</tr>
<tr>
<td>1851</td>
<td>10,593,823</td>
</tr>
<tr>
<td>1852</td>
<td><strong>81,294,700</strong></td>
</tr>
<tr>
<td>1853</td>
<td>39,671,487</td>
</tr>
<tr>
<td>1854</td>
<td>69,433,931</td>
</tr>
<tr>
<td>1855</td>
<td>55,485,395</td>
</tr>
<tr>
<td>1856</td>
<td>57,509,411</td>
</tr>
<tr>
<td>1857</td>
<td>43,628,172</td>
</tr>
<tr>
<td>1858</td>
<td>46,591,140</td>
</tr>
<tr>
<td>1859</td>
<td>45,846,599</td>
</tr>
<tr>
<td>1860</td>
<td>44,095,163</td>
</tr>
<tr>
<td>1861</td>
<td>41,884,995</td>
</tr>
<tr>
<td>1862</td>
<td>38,854,668</td>
</tr>
<tr>
<td>1863</td>
<td>$23,501,736</td>
</tr>
<tr>
<td>1864</td>
<td>24,071,423</td>
</tr>
<tr>
<td>1865</td>
<td>17,930,858</td>
</tr>
<tr>
<td>1866</td>
<td>17,123,867</td>
</tr>
<tr>
<td>1867</td>
<td>18,265,452</td>
</tr>
<tr>
<td>1868</td>
<td>17,555,867</td>
</tr>
<tr>
<td>1869</td>
<td>18,229,044</td>
</tr>
<tr>
<td>1870</td>
<td>17,458,133</td>
</tr>
<tr>
<td>1871</td>
<td>17,477,885</td>
</tr>
<tr>
<td>1872</td>
<td>15,482,194</td>
</tr>
<tr>
<td>1873</td>
<td>15,019,210</td>
</tr>
<tr>
<td>1874</td>
<td>17,264,836</td>
</tr>
<tr>
<td>1875</td>
<td>16,876,009</td>
</tr>
<tr>
<td>1876</td>
<td>15,610,723</td>
</tr>
<tr>
<td>1877</td>
<td>16,501,268</td>
</tr>
<tr>
<td>1878</td>
<td>$18,839,111</td>
</tr>
<tr>
<td>1879</td>
<td>19,626,654</td>
</tr>
<tr>
<td>1880</td>
<td>20,030,761</td>
</tr>
<tr>
<td>1881</td>
<td>19,223,155</td>
</tr>
<tr>
<td>1882</td>
<td>17,146,416</td>
</tr>
<tr>
<td>1883</td>
<td>24,316,873</td>
</tr>
<tr>
<td>1884</td>
<td>13,600,000</td>
</tr>
<tr>
<td>1885</td>
<td>12,661,044</td>
</tr>
<tr>
<td>1886</td>
<td>14,716,506</td>
</tr>
<tr>
<td>1887</td>
<td>13,588,614</td>
</tr>
<tr>
<td>1888</td>
<td>12,750,000</td>
</tr>
<tr>
<td>1889</td>
<td>11,212,913</td>
</tr>
<tr>
<td>1890</td>
<td>12,309,793</td>
</tr>
<tr>
<td>1891</td>
<td>12,728,869</td>
</tr>
<tr>
<td>1892</td>
<td>12,571,900</td>
</tr>
<tr>
<td>1893</td>
<td>$12,422,811</td>
</tr>
<tr>
<td>1894</td>
<td>13,923,281</td>
</tr>
<tr>
<td>1895</td>
<td>15,334,317</td>
</tr>
<tr>
<td>1896</td>
<td>17,181,562</td>
</tr>
<tr>
<td>1897</td>
<td>15,871,401</td>
</tr>
<tr>
<td>1898</td>
<td>15,906,478</td>
</tr>
<tr>
<td>1899</td>
<td>15,336,031</td>
</tr>
<tr>
<td>1900</td>
<td>15,863,555</td>
</tr>
<tr>
<td>1901</td>
<td>16,989,044</td>
</tr>
<tr>
<td>1902</td>
<td>16,910,320</td>
</tr>
<tr>
<td>1903</td>
<td>16,471,264</td>
</tr>
<tr>
<td>1904</td>
<td>19,109,600</td>
</tr>
<tr>
<td>1905</td>
<td>19,197,043</td>
</tr>
</tbody>
</table>

Total $1,434,053,311

BANNER COUNTIES IN DIFFERENT MINERAL PRODUCTS—1905.

As far as the "banner" counties in the different mineral products are concerned, the following is the record for 1905, with the value of the material in which the county leads. It should be explained, however, that certain substances are put under the heading of "unapportioned," which includes product of single mines, etc., in counties, so as to conceal their identity. For this reason it is necessary to put under this heading, borax, soda, coal, Portland cement,
fuller's earth, magnesite, some gold and silver, and a few other substances formerly credited to certain counties. This causes an apparent, but not real, falling off in output of Lassen, Los Angeles, Napa, San Bernardino, Siskiyou, and a few other counties where these "unapportioned" substances occur. If credited to the exact county, where there is only a single operator, private business would be made public. Under these circumstances, the figures of value of output in some counties do not actually represent their relative rank, as some of the products may be placed under "unapportioned." Moreover, some counties lead in output of some substances placed in the "unapportioned" column, and these substances do not therefore appear after the name of the county, thus reducing the county total.

Alameda County leads in macedam ($441,587) and pyrites ($63,958); Butte in platinum ($1,770); Colusa in sandstone ($276,908); El Dorado in asbestos ($2,625) and slate ($40,000); Inyo in lead ($16,247); Kern in lime ($255,500), petroleum ($3,174,966), and tungsten ($18,800); Lake in mineral waters ($219,500); Los Angeles in asphalt ($119,430), brick clays ($853,810), and gypsum ($43,500); Madera in granite ($123,106); Monterey in glass sand ($8,121); Nevada in gold ($3,179,715); Riverside in rubble ($215,229); San Benito in quicksilver ($279,651); San Diego in lithia mica ($276) and gems ($66,000); San Joaquin in natural gas ($53,915); San Mateo in salt ($67,500); Santa Barbara in infusorial earth ($15,000); Santa Cruz in bituminous rock ($42,500); Shasta in copper ($1,688,614) and silver ($167,548); Solano in limestone ($100,000); Sonoma in paving blocks ($66,785); Stanislaus in mineral paint ($2,125); Tuolumne in marble ($66,000). The unapportioned list includes borax, cement, coal, fuller's earth, magnesite, soapstone and soda; so none of these substances are considered in making up the leading products of the individual counties.

It will be noted that two counties lead in three substances: Kern and Los Angeles; four in two, Alameda, El Dorado, San Diego, and Shasta; sixteen in one, Butte, Colusa, Inyo, Lake, Monterey, Nevada, Riverside, San Benito, San Joaquin, San Mateo, Santa Barbara, Santa Cruz, Solano, Sonoma, Stanislaus, and Tuolumne.