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THE MINERAL STATISTICS AND LEAD AND ZINC MINING ON ALSTON MOOR, CUMBERLAND

by: Roger Burt, Peter Waite
and Michael Atkinson.

Recent editions of British Mining have included two admirable articles on the performance of the London Lead Company and Nenthead and Tynedale Lead and Zinc Company in their Alston Moor mining operations during the second half of the nineteenth century.¹ Both articles are well researched and argued but fail to make use of the production returns that were published in the Mineral Statistics of the United Kingdom after 1881 in developing their discussion of the critical changes that took place in the relative output of lead and zinc from, the mines which they worked. These returns, which strongly underline the increasing importance of zinc production in sustaining the profitability of once major lead producers, are readily available, being published under the continuing title of the Mineral Statistics of the United Kingdom by Her Majesty's Inspectors of Mines and appearing in collections of British Parliamentary Papers.

For the last three years, we have been engaged in a long-term project to convert the complete run of annual returns given in the Mineral Statistics between 1845 and 1913 into continuing series arranged on a mine-by-mine basis. This covers the period from the beginnings of systematically recorded production in the mid-nineteenth century to the suspension of detailed returns during the First World War, and has now been completed for all ferrous and non-ferrous mines throughout the United Kingdom. The re-arranged material includes not only production data, but also details of ownership and management given in the List of Metalliferous Mines attached as an Appendix to the Mineral Statistics, as well as returns of employment, above and below ground, as they appeared in the Annual Reports of Her Majesty's Inspectors of Mines from the late 1870s. All of this data has been converted into machine-readable form and is stored on computer to facilitate its manipulation and analysis. From this data bank, we can now conveniently reproduce the full range of information contained in the Mineral Statistics, reconstructed on a mine-by-mine basis, for the whole of the period.

Drawing on this reconstituted material, Table 1 shows the lead production of the mines still worked by the London Lead Company in 1882 and the years that they were indicated as working under the ownership of the Nenthead and Tynedale Lead and Zinc Company. Unfortunately, the Nentead and Tynedale Company did not make detailed mine-by-mine returns of their operations, but returned only aggregate figures for the Nenthead and Garrigill mining areas. These returns of lead and silver production are shown in Table 2. As can be seen, between 1882 and 1895, the output of lead ore declined by half and its value by nearly two-thirds. However, [6] as Table 3 shows, the decline in the volume and value of lead output was more than offset by a rapid increase in zinc production. Taking the value of lead, silver and zinc production together, this gave the Nenthead and Tynedale Company generally increasing returns until 1891, whereafter they began to decline, with a brief revival

in 1894, back to the level of the early 1880s, principally because of a fall-off in zinc production (see Fig.1). The fortunes of these mines were again reversed, particularly as zinc producers, when the Vieille Montagne Company took over the Nenthead and Tynedale Company's leases in 1896 and began further exploration. Between 1896 and 1913, the Vieille Montagne Company, working the Garrigill and Nenthead mines together with several other leases in the area, such as Rodderup Fell, produced £86,340 of lead and £348,448 of zinc (see Table 4). Over the whole period from 1896 to 1913, the Vieille Montagne north Pennine mines produced 20.6% of the total British output of £1,690,000 of zinc.

Table 1 Individual mines reported to be in production, 1882-93.

| Group | Mine | Production of lead Years in production | ore in 1882 (tons) |
|-----------|------------------------|---|--------------------|
| Garrigill | Bayle Hill | 1883-93 | - |
| | Browngill | 1882-92 | 124.4 |
| | Slaggyburn | 1883-84 | - |
| | Tynebottom | 1882-83 | 4 |
| | Priorsdale | 1882-88 | 32.5 |
| | Brownley Hill | 1890-93 | - |
| Nenthead | Capcleugh | 1882-92 | 289.2 |
| | Carrs and Hanging Shaw | 1882-83 | 150 |
| | Guddamgill | 1882-92 | 186.7 |
| | Longcleugh | 1882-92 | 169.7 |
| | Middlecleugh | 1882-92 | 171.7 |
| | Rampgill | 1882-92 | 258.9 |
| | Scaleburn | 1882-83 | 84.8 |
| | Smallcleugh | 1882-92 | 163.2 |
| | Dowgang | 1893 | - |

Table 2 Lead and silver production of mines worked by the London Lead Company and the Nenthead and Tynedale Lead and Zinc Company Ltd.

| Year | Ore (tons) | Lead (tons) | Silver (Oz) | Value (£) |
|------|------------|-------------|-------------|-----------|
| 1882 | 1635.1 | 1226.5 | 8585 | 13,897 |
| 1883 | 1469 | 1101 | 7707 | 11,752 |
| 1884 | 1617 | | 6978 | 12,455 |
| 1885 | 1521 | | 7394 | 12,168 |
| 1886 | 1386 | 987 | 6932 | 11,091 |
| 1887 | 1265 | 901 | 6325 | 9,487 |
| 1888 | 1200 | 878 | 6900 | 9,450 |
| 1889 | 966 | 697 | 6105 | 7,728 |
| 1890 | 933 | 674 | 5896 | 7,114 |
| 1891 | 775 | 552 | 4897 | 5,812 |
| 1892 | 727 | 518 | 4362 | 5,026* |
| 1893 | 700 | 499 | 4200 | 4,548* |
| 1894 | 806 | 559 | 4696 | 4,856* |
| 1895 | 848 | 596 | 4941 | 5,373 |

* value estimated

Table 3 Zinc production of mines worked by the London Lead Company and the Nenthead and Tynedale Lead and Zinc Company Ltd.

| Year | Mines | Ore (tons) | % metal by assay | Zinc obtainable by smelting (tons) | Value (£) |
|------|---------------------------------|------------|------------------|------------------------------------|-----------|
| 1882 | Nenthead Mines | 916 | - | 96 | 916 |
| 1883 | " | 1972 | - | 216.5 | 1,972 |
| 1884 | " | 2541 | - | - | 2,541 |
| 1884 | Bayle Hill etc. Garrigill | 88 | - | - | 219 |
| 1885 | Nenthead Mines | 3022 | - | - | 3,000 |
| 1885 | Garrigill Mines | 31 | - | - | 77 |
| 1886 | Garrigill and Nenthead Mines | 3117 | - | - | 3,897 |
| 1887 | " | 3205 | 41 | - | 4,807 |
| 1888 | " | 3820 | 41 | - | 8,022 |
| 1889 | " | 4010 | 40 | 1251 | 9,022 |
| 1890 | " | 3831 | 42 | - | 11,493 |
| 1891 | " | 3940 | 42 | - | 13,790 |
| 1892 | " | 5208 | 42 | - | 12,958* |
| 1893 | " | 5378 | 42 | - | 11,654* |
| 1894 | " | 5479 | 42 | - | 12,283* |
| 1895 | Nenthead | 4727 | 42 | - | 8,372* |

* value estimated

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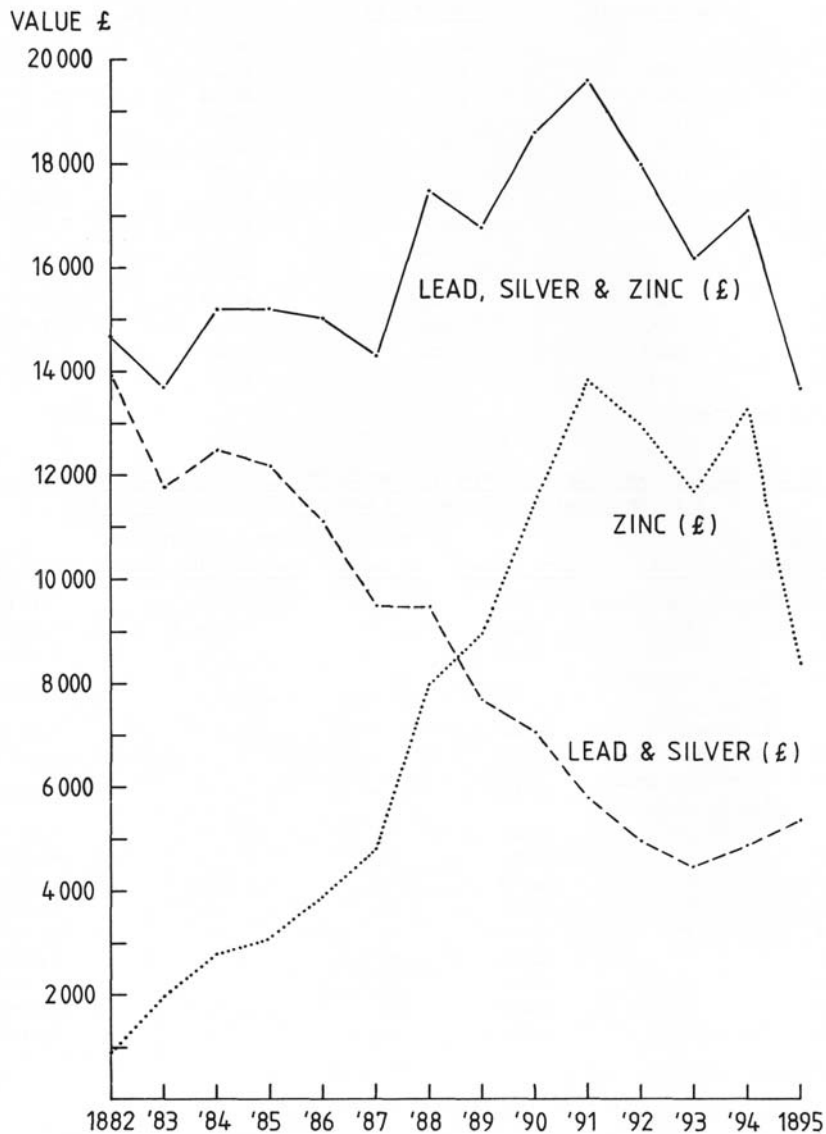


Table 4 Lead and Zinc Output of the Vieille Montagne Company
Nenthead Mines 1896 to 1913

| | Lead | | Zinc | | Total |
|---------|------------|----------|------------|----------|-----------------------|
| | Ore (tons) | Value(£) | Ore (tons) | Value(£) | Value(£) ² |
| 1896 | 645 | 4,220 | 4,237 | 12,174 | 16,494 |
| 1897 | 504 | 3,732 | 5,252 | 15,136 | 18,868 |
| 1898 | 658 | 5,498 | 9,164 | 45,892 | 51,390 ³ |
| 1899 | 450 | 4,195 | 6,328 | 32,554 | 36,749 |
| 1900 | 683 | 8,995 | 6,562 | 17,699 | 26,694 |
| 1901 | 795 | 7,083 | 6,722 | 14,498 | 21,581 |
| 1902 | 748 | 4,666 | 7,143 | 20,287 | 24,953 |
| 1903 | 668 | 4,372 | 5,563 | 20,799 | 25,171 |
| 1904 | 602 | 4,187 | 7,322 | 32,573 | 36,760 |
| 1905 | 530 | 4,583 | 5,609 | 27,054 | 31,637 |
| 1906 | 279 | 3,482 | 3,975 | 22,757 | 26,239 |
| 1907 | 308 | 4,155 | 3,460 | 14,687 | 18,842 |
| 1908 | 80 | 696 | 1,150 | 4,369 | 5,065 |
| 1909 | 5 | 42 | 63 | 292 | 334 |
| 1910 | 134 | 1,111 | 2,209 | 9,897 | 11,008 |
| 1911 | 493 | 4,218 | 5,425 | 24,396 | 28,614 |
| 1912 | 593 | 5,973 | 5,393 | 25,381 | 31,354 |
| 1913 | 605 | 15,132 | 5,895 | 7,903 | 23,035 |
| Totals: | 8,780 | 86,340 | 91,472 | 348,448 | 434,788 |

1. Almond, J.K. 'The Nenthead and Tynedale Lead and Zinc Company Ltd 1882-1896' British Mining No.5 (1977) and Lawson, J. 'The Mineral Production Figures of Alston Moor' British Mining No.8 (1978)

2 Values are estimated from county totals and include the value of silver in the lead ore.

3 The lead returns for 1898 to 1902 inclusive and 1913 include the output of Rodderup Fell. This also applies to the zinc returns for 1899 and 1900.

Dept. of Economic History,
University of Exeter,
Amory Building,
Rennes Drive,
EXETER
EX4 4RJ