there is virtue in a bushel of coals, properly consumed, to raise seventy millions of pounds weight a foot high. This is actually the average effect of an engine at this moment working in Cornwall.

The ascent of Mont Blanc from Chamouni is considered, and with justice, as the most toilsome feat that a strong man can execute in two days. The combustion of two pounds of coal would place him on the summit."

The power which man derives from the use of mineral coal, may be estimated by the duty*

* The number of pounds raised, multiplied by the number of feet through which they are lifted, and divided by the number of bushels of coal (each weighing eighty-four pounds) burnt in raising them, gives what is termed the *duty* of a steam engine, and is the criterion of its power. (See an important paper on improvements of the steam engine, by Davies Gilbert, Esq. Phil. Trans. 1830, p. 121.)

It is stated by Mr. J. Taylor, in his paper on the duty of steam engines, published in his valuable *Records of Mining*, 1829, that the power of the steam engine has within the last few years been so advanced by a series of rapid improvements, that whereas, in early times, the duty of an atmospheric engine was that of 5,000,000 pounds of water, lifted one foot high by a bushel of coal, the duty of an engine lately erected at Wheal Towan in Cornwall, has amounted to 87,000,000 pounds; or, in other words, that a series of improvements has enabled us to extract as much power from one bushel, as originally could be done from seventeen bushels of coal. Thus, through the instrumentality of coal as applied in the steam engine, the power of man over matter has been increased seventeen fold since the first invention of these engines; and increased nearly threefold within twenty years.

There is now an engine at the mines called the Fowey Consols